A. B. Judson

INTRODUCTION, SUMMARY,

AND INDEX

TO THE

STATISTICS OF MICHIGAN.

1870.

NOTE.—A few copies of the Summary and Index have been printed and bound together in pamphlet form, omitting the tabular portion.

STATISTICS

OF THE

STATE OF MICHIGAN,

COLLECTED FOR THE NINTH CENSUS OF THE UNITED STATES,

JUNE 1, 1870.

COMPILED IN THE STATE DEPARTMENT OF MICHIGAN,

UNDER THE DIRECTION OF THE SECRETARY OF STATE,

IN ACCORDANCE WITH AN ACT OF THE LEGISLATURE, APPROVED APRIL 15, 1871.

BY AUTHORITY.

LANSING, MICHIGAN:
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1873.

INTRODUCTORY.

STATE OF MICHIGAN,
SECRETARY'S OFFICE,
Lansing, March 4th, 1873.

The statistics from which the material for this compilation has been selected and condensed, were collected by the United States for the Ninth Census. They embrace statements for the year ending June 1st, 1870. The copy presented to this State has been deposited in the State Department, and is bound in thirty-five large manuscript volumes.

This condensed compilation is published in obedience to Act No. 137, Laws of 1871. It was not ordered until about a year after the census had been taken. If a general law were passed directing the immediate compilation and publication of the statistics presented to this State by the United States in every tenth year, it would render it possible in the future to have the results published sufficiently soon after the enumeration to preserve the interest in the statistics due to their recent collection; and, although this is not as important as a skillful compilation, it seems worthy of consideration. The interest which attaches to a census because recently taken, is not or should not be its most valuable contribution to useful knowledge; nevertheless it seems desirable that this interest also be preserved, and for this purpose it is important that the compilation be begun early, for the reason that it cannot afterwards be hurried without danger of rendering it entirely worthless, as its value depends upon its accuracy, and the skill with which the various statistical combinations are planned.

The Constitution of this State properly requires that a census be taken in every tenth year. A repeated trial of the law providing the details of this census has demonstrated its imperfections, if not its entire uselessness, so far

as relates to the inhabitants,—and statistics of the people themselves ma presumed to be of more consequence than statistics of their lands, cattl other possessions. Ordinary business prudence would seem to dictate the proper steps be taken to render the necessarily large outlay for census enumeration of practical use to the people, as contemplated in provision of the Constitution, and that this be done, if possible, before next State Census, in 1874.

It will doubtless be readily understood as soon as attention is called to matter, that the formation of plans for the inquiries, and the devisin methods for taking a census, as well as the study and grouping of the res is a kind of work requiring as much judgment, experience, and techr knowledge as any trade or profession. The value of the results not b limited, but general, this is an occupation not profitably followed by indi uals; hence it follows that if the State is to have within its limits any pe competent to do this work, it must make the necessary provision by furnis employment at this kind of labor to some person or persons who shall not be gaining experience and knowledge of past methods, but preparing further researches in accordance with more improved methods. No legal vision exists in this State for the employment of a statistician by the S Department, except as an ordinary, or an extra clerk, at such salary a received by other clerks.

Very great efforts have been put forth to make this compilation as accu as possible, and to select for publication those combinations of facts wl appeared to be most useful to the people of this State. In deciding upon matter and methods adopted, the probable scope of the results to be publi by the United States Census Bureau at Washington has been kept in mi although, as the work has been done during about the same time, the labo the Census Bureau have not, to any very great extent, been available for di use or consultation. Up to the date of sending this to press, which is afte the tabular portion of this work has been printed, no publication by Census Bureau concerning the Products of Industry, or Births, Marri and Deaths, has been received. It was not expected that the General Gov ment would distribute very many copies of its census publications in State; therefore, as a rule, that material has been selected for this vol which was thought to be most valuable. In such cases, however, as thos which the labor of compiling was extremely great, and the number who w

use the results quite limited, and mainly those connected with the statistical labors of this or other State Departments which would probably receive the United States Census, important points have been left, with the hope and belief that they would be elaborated at Washington, and some of the labor which would have been required to duplicate that work has been devoted to the exhibition of other points which it was believed would not be undertaken by the Census Bureau.

Much more complete and valuable statements have been planned and worked out from this census than from any previous one in this State, and this Department, and the State, has cause for congratulation that under the circumstances it has been able to secure the services of men who have so faithfully performed the labor required in this compilation; and in this connection, I acknowledge myself under many obligations to DR. H. B. BAKER, who has had the immediate charge of the work of the compilation and arrangement of tables, and to him and his assistants belongs the credit of whatever of merit the work may possess.

Respectfully submitted,

DANIEL STRIKER,

Secretary of State.

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STATISTICS OF MICHIGAN, 1870.

At the outset it seems desirable to convey a clear and accurate idea of the nature, scope, and objects of this compilation. It aims at a positive addition to the sum of human knowledge respecting the people of Michigan, their physical, social, and political condition, and their leading agricultural and other industrial productions and possessions. The fact is recognized at once that the methods of science are peculiarly applicable to the investigation of these questions, and that scientific order and precision are especially desirable in statistics, although as yet seldom attained particularly in their first collection which is usually incidental to some other kind of labor. The skillful and experienced statistician can in many, if not in most cases detect and have corrected, or make allowance for discrepancies in the work before him, as does the master builder in the material prepared for the structure which he has designed; nevertheless, the supply of knowledge, so important as this in governing the action of the people, should not be poisoned with uncertainty and inaccuracy at its source. In the science of chemistry, and in other physical sciences, accurate and faithful observers are rapidly leading towards perfection. In order to make it worthy the name, the science of statistics needs a class of accurate and faithful observers trained in the details of their work. It is hardly possible for such a body of observers to exist, except they are supported by the people in whose interest they labor. They can soon be secured by creating the office of "Registrar" in each city and township in the State, and this would also relieve supervisors and assessors of much work now unpleasant for them to perform, and which is only indifferently accomplished, partly because it is outside of the regular work for which they are elected. The material for this volume was collected by United States Marshals, through their Assistant Marshals appointed for the purpose; but if, hereafter, a proper officer be selected by the people in each locality with special reference to such work, the labor of enumerating for the United States as well as for the State

Censuses will no doubt be profitably intrusted to such officers, who will find employment every year in enumerating and returning to some central office the statistics of births and deaths, and other important statistics.

The word "statistics" has been defined as:

"1. A collection of facts arranged and classified respecting the condition of the people in a State, their health, longevity, domestic economy, arts, property, and political strength, their resources, the state of the country, etc., or respecting any particular class or interest; especially, those subjects which can be stated in numbers, or in tables of numbers, or in any tabular and classified arrangement;"

"2. The science which has to do with the collection and classification of such facts."

A science is understood to embrace facts arranged in order by means of established general laws or ultimate principles. As a preliminary, it is necessary to have at least, facts bound together by some connecting idea, real or hypothetical, rendering possible their classification and use as bases of thought and action. Much of this volume is occupied with such preliminary matter described in the first definition given above, and is designed for use in the near future. It is hoped that it may also contain some contributions to the science of statistics of more permanent prospective value.

Questions of social and political government have their true solution only in social science, and the science of government. Dealing as it does with numerous persons associated together in various relations, social science is necessarily largely dependent for its existence upon the science of statistics; and governmental policy is much more easily and certainly formed and comprehended when such facts as mentioned in the first definition of statistics have been organized in accordance with scientific methods. In fact we have only for a moment to imagine all the members of a legislative body to be ignorant of such facts, to realize that a great influence upon questions of public policy is, or should be, exerted by precise knowledge of such facts as are, or may be embraced in statistics.

One result, or at least accompaniment of political progress is seen in the fact that legislators are not so much as formerly chosen for their profound knowledge of past laws designed to apply to society as it has existed, but, in a much greater proportion than heretofore, are being chosen for their supposed ability to make laws applicable to a more advanced condition of society. It is beginning to be understood that knowledge of those laws of human action and policy, which, depending inflexibly upon the existing conditions of society, are consequently undergoing constant change corresponding, to a certain extent, with that progress in the arts and sciences which is continually modi-

fying the condition, employments, and wants of the people,—such knowledge as, when properly arranged, is called Social Science,—should be demanded of our legislators.

As before suggested, social science can exist only through the generalization of that exact knowledge, to supply which is the special function of statistics. It is therefore easy to understand why it is true that as the people advance in material and social progress, they give an increasing degree of attention to statistics. Neither is it difficult to see why the science of statistics should receive much benefit from the labors of such men as have, by their previous labors and study in the physical sciences, fitted themselves for accurate methods of observation, of experimental inquiry, and of grouping and generalizing the facts obtained.

This subject of statistics appears yet to be in its infancy, notwithstanding it has received attention from the earliest historic times; and there can be no marked progress so long as each succeeding Census is planned and carried through by men who, having had no experience, must of necessity, to a great extent, accept old methods. These remarks are not altogether called forth by difficulties or imperfections in the management of this Census, but result more especially from a general view of the subject as obtained by studying it from its beginning in this State and in the United States up to the present time.

Statistical progress has also sometimes been impeded by a false and mischievous notion that a large force of ordinary clerks can be put upon a work of this kind and rapidly prepare a Census for publication in a manner that will be of any use whatever to any one. It requires at least as much technical knowledge and skill to successfully compile statistics of this character as it does to labor successfully at the trades of blacksmithing, shoemaking, or printing; and scarcely any person who had not served the allotted time as an apprentice at such work, would think of undertaking to shoe a horse, make a pair of boots, or print a book; and yet many seem to think that any one can plan and combine statistical data in a way to throw great light on that most complex of all studies—social science.

It is quite common for statisticians to popularize their results in the form of statements in terms embodying ideas connected with everyday life,—such, for instance, as the number of houses which could be built of the whole amount of lumber produced in one year in a State, county, or township. The writer has been conscious of an earnest desire to reach and exhibit the truth, expressed numerically and distinctly, and preferably in graphic diagrams or in tabular form, believing that the material is thus compactly accessible to all classes of the people who may make of the data supplied such uses as shall best meet their several requirements.

SUMMARY.

PART I.—POPULATION.

The whole number of inhabitants of Michigan June 1st, 1870, as compiled in this Department, was 1,184,282. The number as compiled by the Census Bureau at Washington was 1,184,059. The cause of this slight difference is not known, but great care was taken to make this compilation accurate, as was doubtless the case at Washington, and, considering the very numerous chances for error, perhaps the only wonder is that the difference is so slight. It may be that at Washington they rejected from the count a few more that were twice enumerated than was done here. On the other hand, a few whole pages of names were omitted from the first returns to this Department, and were afterwards secured by correspondence with county clerks and assistant marshals. It is possible that, being more familiar with the localities, this Department may have collected a few more of such omissions than were collected at Washington.

Indians maintaining tribal relations and living upon Government reservations, were not enumerated; such, and only such being excluded as "Indians not taxed." From a Table on page xvii., Report of the Superintendent of the Ninth Census, it appears that the number of such Indians in Michigan June 1st, 1870, was estimated to have been 3,176. If that number be added to the population enumerated, the "True Population" of the State is found to be 1,187,457, as herein compiled, or 1,187,234, as compiled at Washington.

Excluding "Indians not Taxed," and comparing the population with that shown by the Census of 1860, the increase is found to have been 435,169, or 58.09 per cent of the population in 1860. Although this is a very rapid increase, it is much below the rate previous to 1860, as will be seen by Exhibit A, which relates to the population of the territory now included in this State and exhibits by decennial periods its growth from the small beginning which had been made at Mackinac previous to the year 1800. The falling off in the rate of increase since the Census of 1860, is sufficiently accounted for by a

reference to the war of 1861–5. The difference between the per cent of increase in Michigan from 1860 to 1870, and the rate from 1840 to 1860, bears very nearly the same relation to the rate from 1840 to 1860, as does the difference between the per cent. of increase in the United States from 1860 to 1870, and the average rate previous to 1860, to that previous average. In other words, a comparison of Exhibits A and B shows that, although the growth of the population of Michigan has been much more rapid than the average of the United States, its growth was checked during the war by about the same proportion of its former rate as was the growth of population in the United States. Its per cent. of increase by decennial periods, in peace and in war, was more than twice as great as the average in the United States.

If the average rate from 1840 to 1860 had been maintained until 1870, the population of Michigan would then have been 1,407,209 instead of 1,184,282, a difference of nearly 223,000, to be charged wholly, or in part, to direct losses and depressing influences of the war.

EXHIBIT A.—*Rate of Increase of Population of Michigan, by Decennial Periods, since 1800.*

YEAR.	Population of Michigan.	Increase over Previous Census.	Per Cent. of the Increase to Population at Beginning of Period.
1800	551	----------	----------
1810	4,762	4,211	764.24
1820	8,896	4,134	86.81
1830	31,639	22,743	255.65
1840	212,267	180,628	570.90
1850	397,654	185,387	87.33
1860	749,113	351,459	88.38
1870	1,184,282	435,169	58.09

EXHIBIT B.—*Rate of Increase of Population of the United States, by Decennial Periods since 1790, including Territorial additions.*

YEAR.	Population of United States	Increase over Previous Census.	Per Cent. of the Increase to Population at Beginning of Period.
1790	3,929,214	.....	.....
1800	5,308,483	1,379,269	35.10
1810	7,239,881	1,931,398	36.38
1820	9,638,453	2,398,572	33.12
1830	12,866,020	3,227,567	33.48
1840	17,070,240	4,204,220	32.67
1850	23,191,876	6,121,636	35.86
1860	31,399,300	8,207,424	35.38
1870	38,558,371	7,159,071	22.80

Various methods have been adopted by statisticians to illustrate the rate of increase of population, mainly for the purpose of projecting it into the future, thus foretelling the population at a future time. Some have assumed that it was in accordance with the rule of geometrical progression; and the mathematical principle of differences has been applied, second differences being assumed constant. In Exhibits A and B, is shown for this State and for the United States, the relation which has existed in times past between the increase during each decennial period of time, and the number of inhabitants at the beginning of such period.

The increase of population by excess of births over deaths, and by excess of immigration over emigration is dependent upon so many conditions, such as the favorableness of locality, peace and prosperity of inhabitants, age of inhabitants, proportion of each sex, etc., that it must be estimated for each locality and for each period of time by itself, taking all facts bearing upon the question into consideration, and after all this has been done, so many unforeseen contingencies may arise that no great confidence should be placed in predictions of future population. Nevertheless, if such estimates are considered subject to all uncertainties which may exist or arise, they may be useful. If the increase of population of Michigan during the period from 1870 to 1880 shall only equal the average rate in the United States from 1790 to 1860, it will, in 1880 be 1,593,688. If the increase shall continue at the same rate as from 1860 to 1870, the population in 1880 will be 1,872,231. If, however, the increase from 1870 to 1880 shall equal the average rate in Michigan from

1840 to 1860, in 1880 the population of Michigan will be 2,224,674. The latter supposition seems to the writer much the most probable one of the three.

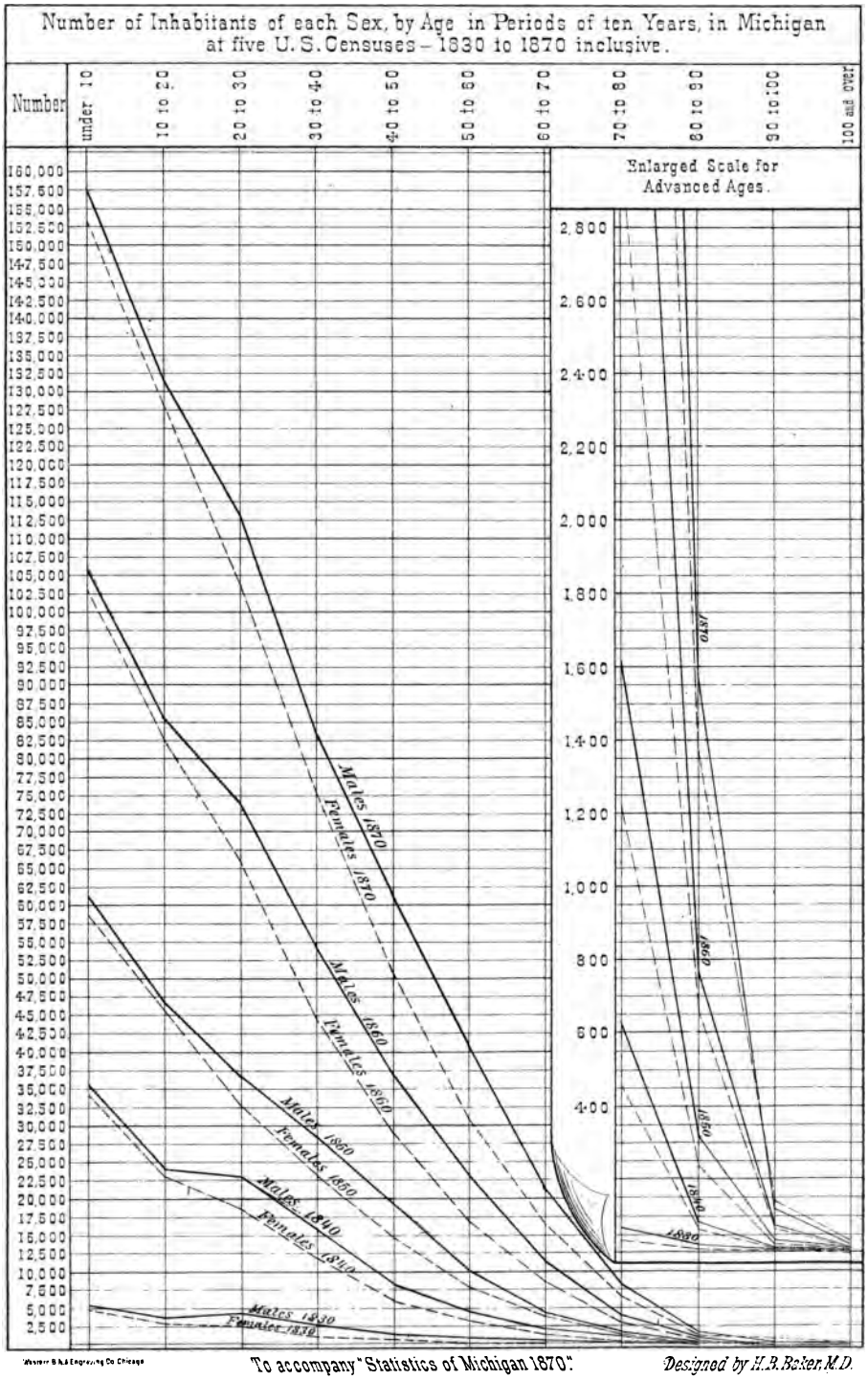
The growth of population has not been uniformly distributed throughout all the ages. This is shown by Tables 1 and 2, and Diagram No. 1. The evidence does not extend back sufficiently far to show the proportion of each sex at each age during the very first settlement of the State. Doubtless the population then contained a large proportion of males at the laboring and productive ages of twenty to forty. In fact, this is shown by Table 2 to have been true in 1830.

The growth of population at each United States Census since 1830, by number of inhabitants at ages within each period is shown in Table 1, and is graphically represented in Diagram No. 1. An idea of the proportion of the inhabitants at the different ages can be best obtained from Table 2, which exhibits the per cent. of the total population, or, if the decimal points be disregarded, the number of inhabitants within each period of age in 10,000 at all ages.

TABLE 1.—*Exhibiting, by Sex, the Number of Inhabitants in Michigan at the time of the several United States Censuses of 1830, 1840, 1850, 1860, and 1870, at Ages included in Periods of Ten Years each.*

AGES IN PERIODS.	1870.		1860.		1850.		1840.		1830.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
ALL AGES	618,251	566,031	394,694	354,419	209.896	187,758	118,788	98,479	18,349	13,290
Under ten	157,668	152,948	105,756	102,789	61,254	58,363	35,631	33,570	5,382	4,830
Ten to twenty	131,731	127,961	85,084	82,617	46,945	45,504	28,829	22,715	3,498	3,163
Twenty to thirty	112,825	103,702	73,822	65,951	36,467	32,734	22,878	18,782	4,448	2,569
Thirty to forty	83,255	75,037	54,611	44,427	28,372	23,180	16,057	11,888	2,754	1,409
Forty to fifty	60,910	50,451	37,027	28,816	19,558	14,885	8,806	6,131	1,247	735
Fifty to sixty	40,566	30,711	22,675	17,423	10,434	7,752	4,449	3,400	663	391
Sixty to seventy	21,357	17,181	11,149	8,678	4,834	3,797	1,906	1,444	266	141
Seventy to eighty	8,008	6,357	3,658	2,931	1,603	1,213	625	453	65	36
Eighty to ninety	1,574	1,380	768	657	318	242	90	81	21	11
Ninety to one hundred	129	135	81	76	42	25	14	12	4	5
One hundred & over	16	17	11	6	6	3	3	3	1	.....
Unknown ages	212	151	57	48	63	60	.....	.....	.....	.....

DIAGRAM No. 1.



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"To accompany "Statistics of Michigan 1870".

Designed by H. B. Baker, M.D.

TABLE 2.—*Exhibiting, by Sex, for the Inhabitants of Michigan, at the time of the several United States Censuses of 1830, 1840, 1850, 1860, and 1870, the Proportion at each Period of Age, by Per Cent. of those at each Period of Age to the Number at All Ages.*

AGES IN PERIODS.	1870.		1860.		1850.		1840.		1830.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
ALL AGES	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Under ten	25.50 +	27.02 +	26.79 +	29.00 +	29.18 +	31.08 +	31.31 +	34.08 +	29.33 +	36.34 +
Ten to twenty	21.30	22.60	21.55	23.31	22.36	24.23	20.94	23.06	19.06	23.79
Twenty to thirty	18.24	18.32	18.70	18.60	17.37	17.43	20.10	19.07	24.24	19.33
Thirty to forty	13.46	13.25	13.83	12.53	13.51	12.34	14.11	12.07	15.00	10.60
Forty to fifty	9.85	8.91	9.38	8.13	9.31	7.92	7.29	6.22	6.79	5.53
Fifty to sixty	6.56	5.42	5.74	4.91	4.97	4.12	3.90	3.45	3.61	2.94
Sixty to seventy	3.45	3.03	2.82	2.44	2.30	2.02	1.67	1.46	1.44	1.06
Seventy to eighty	1.29	1.12	.92	.82	.76	.64	.54	.45	.35	.27
Eighty to ninety	.25	.24	.19	.18	.15	.12	.07	.08	.11	.08
Ninety to one hundred	.02	.02	.02	.02	.02	.01	.01	.01	.02	.03
One hundred & over	.00	.00	.00	.00	.00	.00	.00	.00	.00	.....
Unknown ages	.03	.02	.01	.01	.02	.03	.....	.....	.....	.....

There seems to have been in 1830 a greater proportion of females aged under ten years, and a smaller proportion of females aged thirty to eighty than at any census since that time. The proportion of females aged under ten has been steadily decreasing since 1830. Since 1840 the proportion of males aged under ten has been steadily decreasing. It may be remarked in passing that although this computation is not sufficiently detailed to show the whole truth, if we suppose this to be equivalent to a statement that the proportion of children aged under five years has steadily decreased, then, as a very large proportion of the deaths are of children under five, other things being equal, it ought to follow that the statement of the death-rate in this State should also show a corresponding decrease since that time. The data is not at hand, except since 1850, when the per cent. of deaths to population was stated by the Census as 1.14. In 1860 it was .99, and in 1870 by the United States Census it was .94. It is not maintained that this decrease in the death-rate was necessarily wholly due to change of age of inhabitants, but in estimating the death-rate of different localities, or of the

same locality at different times, the proportion of inhabitants at the different ages must be taken into consideration, otherwise the estimate will be worthless. This will serve as one important reason why the number of inhabitants at each and every age should be correctly ascertained and stated at every Census, as otherwise we can gain no accurate knowledge of the real force of mortality in different localities, or in the same locality under different conditions. Attention is here only called to two or three items shown by these tables, a thorough examination of them will reveal many of the leading facts concerning the changes which have occurred in the number and proportion of inhabitants of this State at the different periods of age.

TABLE 3.—*Exhibiting, for each Sex, and for Both Sexes, the Total Population of Michigan at All Ages and at Each Period of Age at the time of the United States Censuses of 1860 and 1870, the Excess in 1870 over the Number in 1860 the Per Cent. of such Excess to the Population in 1860, and the Average Annual Increase from 1860 to 1870, expressed in Numbers and Decimals.*

AGES IN YEARS AND PERIODS OF YEARS.	SEX.	POPULATION. Census, 1870.	POPULATION. Census, 1860.	EXCESS IN 1870 OVER POPULATION IN 1860. Number.	EXCESS IN 1870 OVER POPULATION IN 1860. Per Cent. of Excess to Population, 1860.	Average Annual Increase.	REMARKS.
ALL AGES	Total	1,184,282	749,113	435,169	*a* 58.091	43,516.9	
	Males	618,251	394,694	223,557	56.640	22,355.7	
	Females	566,031	354,419	211,612	59.706	21,161.2	
Under 1	Total	32,802	21,517	11,285	52.446	1,128.5	
	Males	16,692	10,941	5,751	52.568	575.1	
	Females	16,110	10,576	5,534	52.326	553.4	
One and under 5	Total	131,487	91,852	39,635	*a* 43.150	3,963.5	÷ 4 = Av. at each age.
	Males	66,827	46,426	20,401	43.943	2,040.1	" " " "
	Females	64,660	45,426	19,234	42.341	1,923.4	" " " "
Five and under 10	Total	146,327	95,176	51,151	53 743	5,115.1	÷ 5 = " " "
	Males	74,149	48,389	25,760	53.235	2,576.0	" " " "
	Females	72,178	46,787	25,391	54.269	2,539.1	" " " "
Ten and under 15	Total	140,586	85,455	55,131	64.514	5,513.1	
	Males	71,581	43,796	27,785	63.441	2,778.5	
	Females	69,005	41,659	27,346	65.642	2,734.6	
Fifteen and under 20	Total	119,106	82,246	36,860	44.816	3,686.0	
	Males	60,150	41.288	18,862	45.683	1,886.2	
	Females	58,956	40,958	17,998	43.942	1,799.8	
Twenty and under 30	Total	216,527	139,773	76,754	54.913	7,675.4	÷ 10 = Av. at each age.
	Males	112,825	73,822	39,003	52.833	3,900.3	" " " "
	Females	103,702	65,951	37,751	57.240	3,775.1	" " " "
Thirty and under 40	Total	152,292	99,038	59,254	59.829	5,925.4	
	Males	83,255	54,611	28,644	*a* 52.450	2,864.4	
	Females	75,037	44,427	30,610	68.899	3,061.0	
Forty and under 50	Total	111,361	65,843	45,518	69.131	4,551.8	
	Males	60,910	37,027	23.883	64.501	2,388.3	
	Females	50,451	28,816	21,635	75.079	2,163.5	
Fifty and under 60	Total	71,277	40,098	31,179	77.756	3,117.9	
	Males	40,566	22,675	17,891	78.901	1,789.1	
	Females	30,711	17,423	13,288	76.267	1,328.8	
Sixty and under 70	Total	38,538	19,827	18,711	94.371	1,871.1	
	Males	21,857	11,149	10,208	91.559	1,020.8	
	Females	17,181	8,678	8,503	97.983	850.3	
Seventy and under 80	Total	14,365	6,589	7,776	*b* 118.014	777.6	
	Males	8,008	3,658	4,350	118.917	435.0	
	Females	6,357	2,931	3,426	116.888	342.6	
Eighty and under 90	Total	2,954	1,420	1,534	108.028	153.4	
	Males	1,574	763	811	106.290	81.1	
	Females	1,380	657	723	110.045	72.3	
Ninety and under 100	Total	264	157	107	*c* 68.152	10.7	
	Males	129	81	48	59.259	4.8	
	Females	135	76	59	77.631	5.9	
One hundred and over	Total	33	17	16	94.117	1.6	
	Males	16	11	5	45.454	.5	
	Females	17	6	11	183.333	1.1	
Unknown ages	Total	363	105	258	245.714	25.8	
	Males	212	57	155	271.929	15.5	
	Females	151	48	103	214.583	10.3	

a Influence of war of 1861–5?
b Excess of Births in years 1790 to 1800.
c Decrease of births during war of the Revolution?

In Exhibit A was shown the per cent of increase of total population by decennial periods, including the one from 1860 to 1870. In Table 3, the per cent. of increase since the last Census is studied more closely, by per cent. of increase of each sex at each period of age to the population in 1860 of same sex within the same period of age. The per cent. of such increase is found to have been greatest at the ages between 70 and 80; next greatest between 80 and 90; next, between 60 and 70; then follow in the order named: 100 and over, 50 to 60, 40 to 50, 90 to 100, 10 to 15, 30 to 40, average of all ages, 20 to 30, 5 to 10, under 1, 15 to 20, and 1 to 5.

In a general way, the number of persons living at ages within successive equal periods, as a rule, gradually diminish with advancing age if the periods are made to include several single ages. This statement, however, does not appear to hold true concerning successive single ages in years. If we can place any confidence whatever in the statements of the age by this Census, the number of exceptions are, to say the least, very numerous. [See Diagrams Nos. 3 and 4.]

Confining ourselves to the statement as it applies to periods of ages, we find by examining Table 3, that the uniformity of this decrease with advancing age is much broken and disturbed by greater and lesser waves of inequality. One of these waves is prominent in the much smaller per cent. of increase of males than of females aged 30 to 40,—a difference of over 16 per cent. This is the crest of the wave which appears in a difference between the sexes of not quite 5 per cent. in the period of age 20 to 30, and at 40 to 50 is last seen as a difference of a little over 10 per cent. This wave the writer believes to be due to the influence of the war of 1861–5. The cause of the diminished proportion of males aged 30 to 40 seems apparent; the diminished proportion in the ages 40 to 50 would result from a loss in 1862–3–4 of men at that time aged less than 40.

It may seem strange that the result of the revolutionary war should still be noticeably impressed upon the population of Michigan, but such appears to be probable. The evidence in Table 3 alone would not, perhaps, of itself, be sufficient to show this, but on page 520, Mortality Vol. United States Census 1860, we find that the increase of total population of the United States from 1830 to 1840 was quite small at ages 60 to 70; from 1840 to 1850 it was small at ages 70 to 80; from 1850 to 1860, at ages 80 to 90, and by Table 3 we find the increase in Michigan exceptionally small at ages 90 to 100, compared with the increase of those 70 to 90, or even of those aged 100 and over. This may fairly be attributed to a decrease in the birth-rate during the years 1770 to 1780.

It is somewhat important for statisticians who deal with vital statistics to recognize and keep such facts as these in mind, for to whatever cause this wave be attributed, the fact of its existence appears indisputable. At the next decennial Census, in 1880, it will undoubtedly show itself in the very small number of inhabitants aged 100 and over, and unless the fact be kept in mind there will be much unnecessary alarm concerning the shortening of life as *apparently* shown by the decreasing proportion of inhabitants aged 100 and over.

Referring to the period of age at which the per cent. of increase was greatest, it may be remarked that persons now living at ages within that period were born within the years 1790 to 1800. On page 520 Mortality Vol. Eighth Census, 1860, attention is called to the historical fact of the great prosperity of this country at that time, that prosperity being somewhat dependent upon a memorable revolution commenced in France in 1789, which caused a demand for our exports, etc. The general prosperity of the country, as there pointed out, appears to have resulted in an influence upon the birth-rate noticeable in the population shown by all the Censuses of the United States since that time, increasing unusually the per cent. of increase from 1830 to 1840 of those aged 40 to 50, from 1840 to 1850 of those aged 50 to 60, from 1850 to 1860 of those aged 60 to 70. We have just seen from Table 3, that the population of Michigan still shows this wave in 1870, the greatest per cent. of increase since 1860 being of those aged 70 to 80, born during the historic period of prosperity referred to above.

Possibly there may be discovered a slight wave in the period 50 to 60, consisting in a comparatively small increase of both sexes, more especially of females, compared with the rate at 60 to 70, and 70 to 80. It seems quite possible that the influence of the conditions existing during the war of 1812 may be still apparent in the decreased number of inhabitants at certain ages resulting from a decrease in the birth-rate at that time. During, and after wars, there is popularly believed to be a larger proportion of births of males than of females.

The influence of the war of 1861–5 upon the birth-rate appears to be exhibited in the diminished increase of those aged 1 to 5, compared with the increase of those aged under 1, and 5 to 10,—ages including those born before and since the war. Here again the popular idea appears to receive support, for while of those aged 5 to 15 there was a larger increase of females than of males, of those aged under 5—born since the war—there was a larger increase of males than of females.

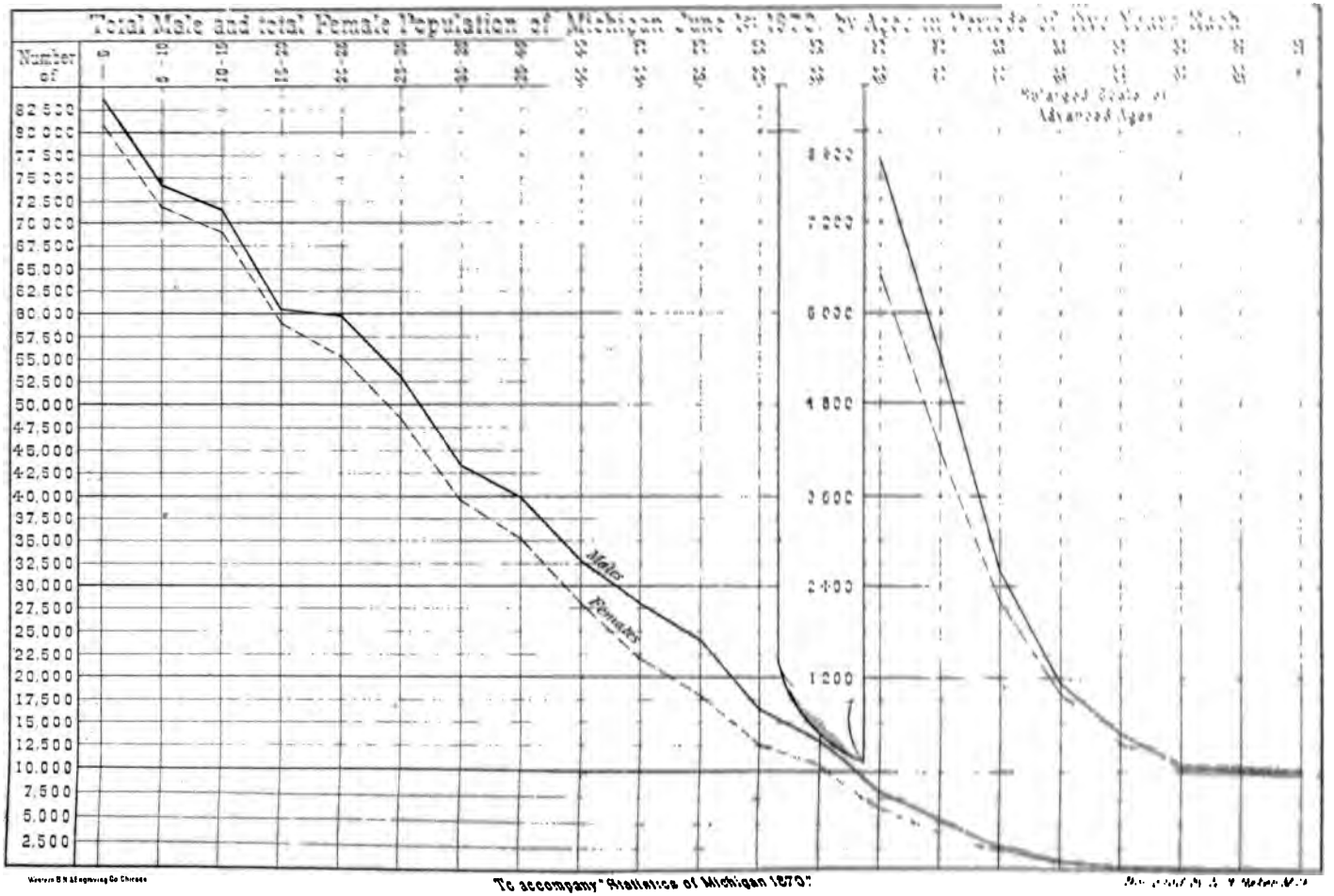
When remarking upon Exhibit A, reference was made to the late war as the cause of the diminished rate of total increase since 1860. Table 3 exhibits the fact that this decrease applied to females with almost as much force as to males, the difference in the rate of increase being only about 3 per cent. The idea received from this statement by itself should be somewhat modified, for we have seen that the increase of population by births immediately after wars includes a greater than ordinary proportion of males, or more correctly, the births of females are decreased in greater proportion than the births of males. The evidence of the tables on a kindred subject in "Vital Statistics of Michigan, 1870,"—see page 78,—was to the effect that "causes tending to increase the birth-rate, tend also to increase the proportion of female offspring." This same statement reversed will apply to the decrease of female offspring through war or any other cause tending to decrease the birth-rate. It appears then that the small per cent. of increase of females since 1860, which, without such explanation, seems surprising, is not altogether due to increased death-rate and to diminished immigration during the war, but may in part be attributed to a diminished birth-rate.

Just how much the total birth-rate was diminished during the late war cannot be easily shown, for the reason that at that time no registration of births was required by law, and an attempt to show it from these tables would involve more time and labor than can now be devoted to the subject; but some idea of the decrease in the rate may be gained by considering, first, that the per cent. of increase since 1860 of the total population at all ages, was undoubtedly diminished by the low birth-rate; second, that the per cent. of increase of males aged 1 to 5, fell short of the average increase of males at all ages by nearly 13 per cent., while the per cent of increase of females aged 1 to 5, fell short of the average of all females by over 17 per cent.

A very instructive study can be pursued by computing the per cent. of increase of each sex at each period of age to the population at last Census within the next preceding period. This is a method of examination which will well exhibit the comparative losses within the different periods of age. The results thus obtained should be compared with those by the preceding method, and also with the death-rate, as ascertained by other methods. Tables 1, 2, and 3 supply the data for this study, and it is hoped that some persons will be sufficiently interested to make use of the material.

Diagram No. 2 exhibits the number and relative proportion of each sex living at ages within periods of five years each. Some of the material from which it was constructed is exhibited in Table 4, which also contains statements of the proportion of inhabitants and the proportion of each sex at ent ages and groups of ages.

DIAGRAM No. 2.



To accompany "Statistics of Michigan 1870."

TABLE 4.—*Exhibiting, for each Sex and for both Sexes, the Total Population, by Age and by Periods of Age; the Number at each Age and Period of Age in 10,000 at All Ages, and at each Age and Period of Age, the Per Cent. of each Sex to Total of Both Sexes in Michigan, June 1st, 1870.*

AGES.	POPULATION JUNE 1ST, 1870.							
	TOTAL NUMBER.			NUMBER IN EACH AGE IN 10,000 AT ALL AGES. *a*			PER CENT. OF EACH SEX TO TOTAL OF BOTH SEXES.	
	Total.	Males.	Females.	Total.	Males.	Females.	Males.	Females.
ALL AGES	1,184,282	618,251	566,031	10,000	10,000	10,000	52.20	47.79
Under one	32,802	16,692	16,110	277	270	285	50.88	49.11
One to two	31,970	16,287	15,683	270	263	277	50.94	49.05
Two to three	34,174	17,462	16,712	289	282	295	51.09	48.90
Three to four	33,929	16,979	16,950	287	275	299	50.04	49.95
Four to five	31,414	16,099	15,315	266	260	271	51.24	48.75
Five to ten	146,327	74,149	72,178	1,236	1,199	1,275	50.67	49.32
Ten to fifteen	140,586	71,581	69,005	1,186	1,156	1,219	50.09	49.90
Fifteen to twenty	119,106	60,150	58,956	1,006	973	1,042	50.50	49.49
Twenty to twenty-five	115,186	59,947	55,239	973	970	976	52.04	47.95
Twenty-five to thirty	101,841	52,878	48,463	856	857	856	52.17	47.82
Thirty to thirty-five	83,257	43,280	39,977	703	700	706	51.98	48.01
Thirty-five to forty	75,035	39,975	35,060	634	647	619	53.27	46.73
Forty to forty-five	61,013	32,729	28,284	515	529	500	53.64	46.35
Forty-five to fifty	50,348	28,181	22,167	425	456	392	55.97	44.02
Fifty to sixty	71,277	40,566	30,711	601	655	543	56.91	43.08
Sixty to seventy	38,538	21,357	17,181	325	345	304	55.41	44.58
Seventy to eighty	14,365	8,008	6,357	121	129	112	55.74	44.25
Eighty to ninety	2,954	1,574	1,380	25	25	24	53.28	46.71
Ninety to one hundred	264	129	135	2	2	2	48.86	51.13
One hundred and over	33	16	17	.27	.25	.30	48.48	51.51
Unknown	363	212	151	3	3	3	58.40	41.59

DIAGRAMS.

Inasmuch as some who will receive this volume may not be familiar with the graphic method of illustration, or may not readily understand the principle of construction of these diagrams, it is remarked that they are employed to exhibit, as a chart or picture, certain statistical facts which otherwise, if displayed at all, would have to be conceived by the unaided imagination from tables, or figures, standing as symbols of the facts designed to be set forth.

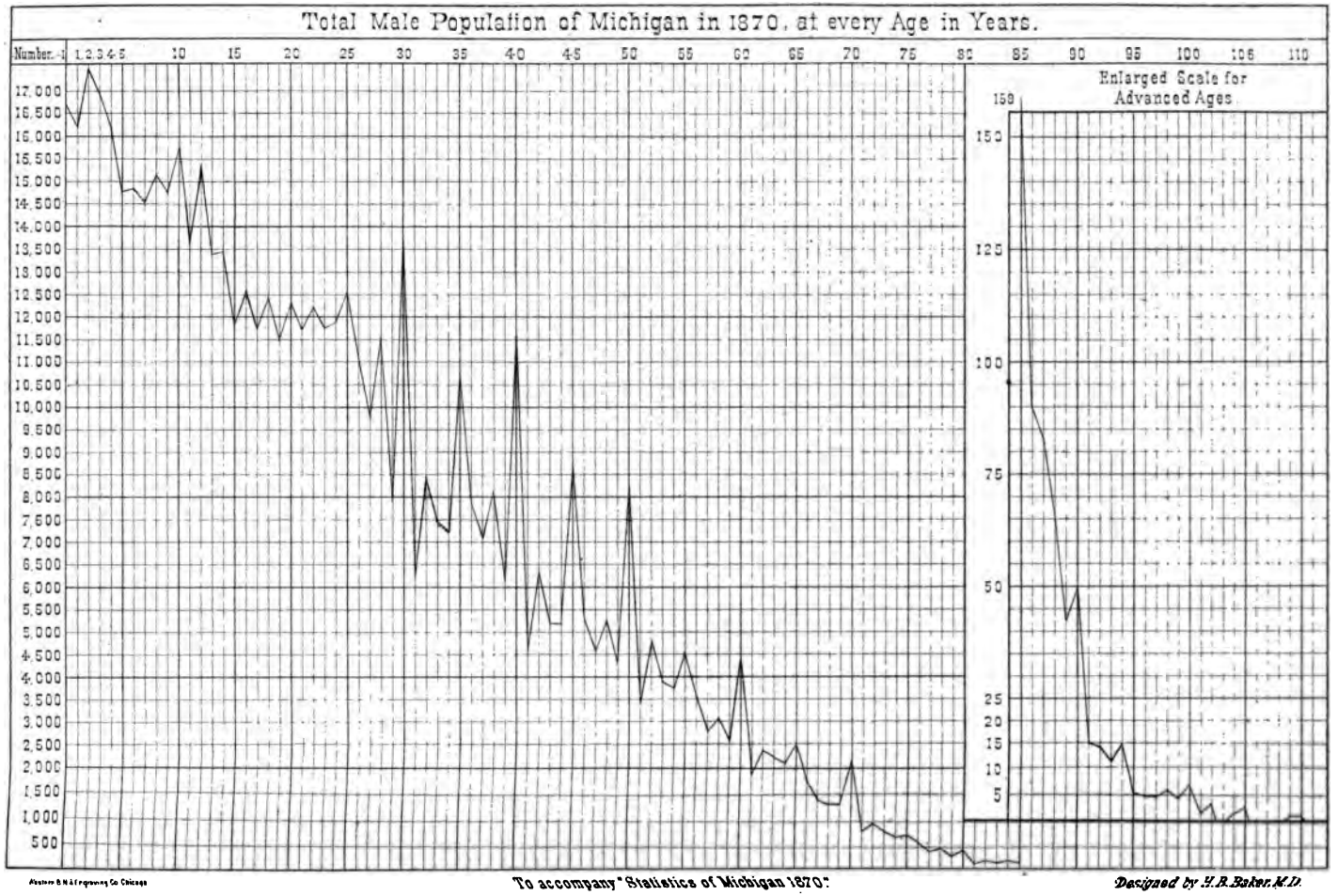
a When the fraction was .5 or over, it was called 1; if under .5 it was thrown away, except at age "100 and over."

These diagrams are constructed as follows: As a rule, only one series of numbers is used for all the statements in a diagram. The numbers are placed on the left side, the smallest at the bottom, and they increase according to a regular scale from the bottom to the top of the diagram. The statements exhibited in the smallest numbers are consequently nearest the bottom, and the relative distance of the different parts of the line, or of different lines up from the bottom of the diagram, conveys a correct idea of the relative numbers represented at different months, ages, etc., which are designated by words or figures written over the tops of the perpendicular lines. For instance, if it is desired to exhibit, as is done in Diagram No. 3, the number of male inhabitants at each age in years, as under 1, 1, 2, 3, 4, 5, 6, etc., these figures are written at the top of the diagram, each figure over a perpendicular line. The series of numbers is placed on the left, beginning at the bottom with the smallest one required. These numbers are opposite horizontal lines to which they apply all the way across the diagram. The line representing the male inhabitants is then begun on the first perpendicular line designated as the age "Under 1," at such a hight from the bottom of the diagram as is opposite the figures on the left expressing the number of males at such age. The line then proceeds directly to the next perpendicular line under the figure 1, crossing it precisely opposite the figures on the left expressing the number at that age, and proceeds in a similar manner across the diagram until the number at every age is exhibited.

The diagrams being drawn to scale, they convey an idea which, while it is much more distinct and comprehensive than the unaided imagination can conceive from the figures alone, is at the same time nearly as accurate in details, although for purposes of comparison by precise numbers it is advisable to employ the statements in the tables.

By means of these diagrams a great number of distinct statements can be exhibited within a space so limited as that all of them shall be visible at one time, thus giving an idea of the various relations which exist between the several statements; as, for instance, in Diagram No. 2 may be seen a statement of the number of inhabitants of each sex living at each group of ages within every quinquennial period of life. That knowledge in detail could be better gained from the tables, but in the diagram may also be seen at a glance the relative number and proportion of each sex at each period of age and the relation which the number and proportion of each sex at each period of age bears to the number and proportion of each sex at each and every other period of age; a view at once so distinct and at the same time so complex and comprehensive as to transcend the results attained by the best trained intellect without the aid received through the eye by means of some such graphic illustration.

DIAGRAM No. 3.



Western B.N.&Engraving Co. Chicago

To accompany "Statistics of Michigan 1870."

Designed by Y.R. Baker, M.D.

TABLE 5.—*Exhibiting the Total Number of Males, and the Total Number of both Sexes in Michigan June 1st, 1870, at each and every age, in years for those aged One Year and Over, and at every age in Months for those aged Under One Year.*

Ages	0-12	1-12	2-12	3-12	4-12	5-12	6-12	7-12	8-12	9-12	10.12	11-12	Under 1	1	2	3	4	5
Males	120	1,999	1,577	1,787	1,660	1,445	1,768	1,352	1,580	1,898	1,224	782	16,692	16,287	17,462	16,979	16,099	14,784
Both Sexes	248	3,967	3,208	3,467	3,164	2,881	3,520	2,650	3,044	2,732	2,415	1,511	32,802	31,970	34,174	33,929	31,414	29,091

Ages	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Males	14,848	14,552	15,198	14,767	15,751	13,581	15,364	13,408	13,477	11,813	12,585	11,759	12,489	11,504	12,335	11,775	12,209	11,794
Both Sexes	29,555	28,872	30,011	28,798	30,459	27,002	30,052	26,660	26,413	23,528	25,079	23,083	25,196	22,220	24,733	21,638	23,595	22,411

Ages	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Males	11,834	12,529	11,019	9,821	11,511	7,993	13,784	6,288	8,471	7,474	7,263	10,750	7,866	7,067	8,111	6,181	11,544	4,569
Both Sexes	22,809	23,718	21,488	18,873	21,926	15,336	25,537	12,256	16,582	14,717	14,165	19,359	15,333	13,429	15,355	11,559	20,684	8,529

Ages	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
Males	6,293	5,149	5,174	8,694	5,366	4,565	5,230	4,326	8,246	3,443	4,712	3,988	3,791	4,507	3,577	2,757	3,059	2,586
Both Sexes	11,798	9,986	10,066	14,833	9,649	8,340	9,651	7,875	14,193	6,092	8,246	6,923	6,820	7,791	6,333	4,894	5,472	4,513

Ages	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
Males	4,418	1,918	2,383	2,248	2,076	2,490	1,733	1,450	1,323	1,318	2,137	799	919	868	725	739	587	478
Both Sexes	8,060	3,431	4,291	4,017	3,844	4,418	3,167	2,621	2,469	2,225	3,771	1,382	1,665	1,505	1,308	1,366	1,049	886

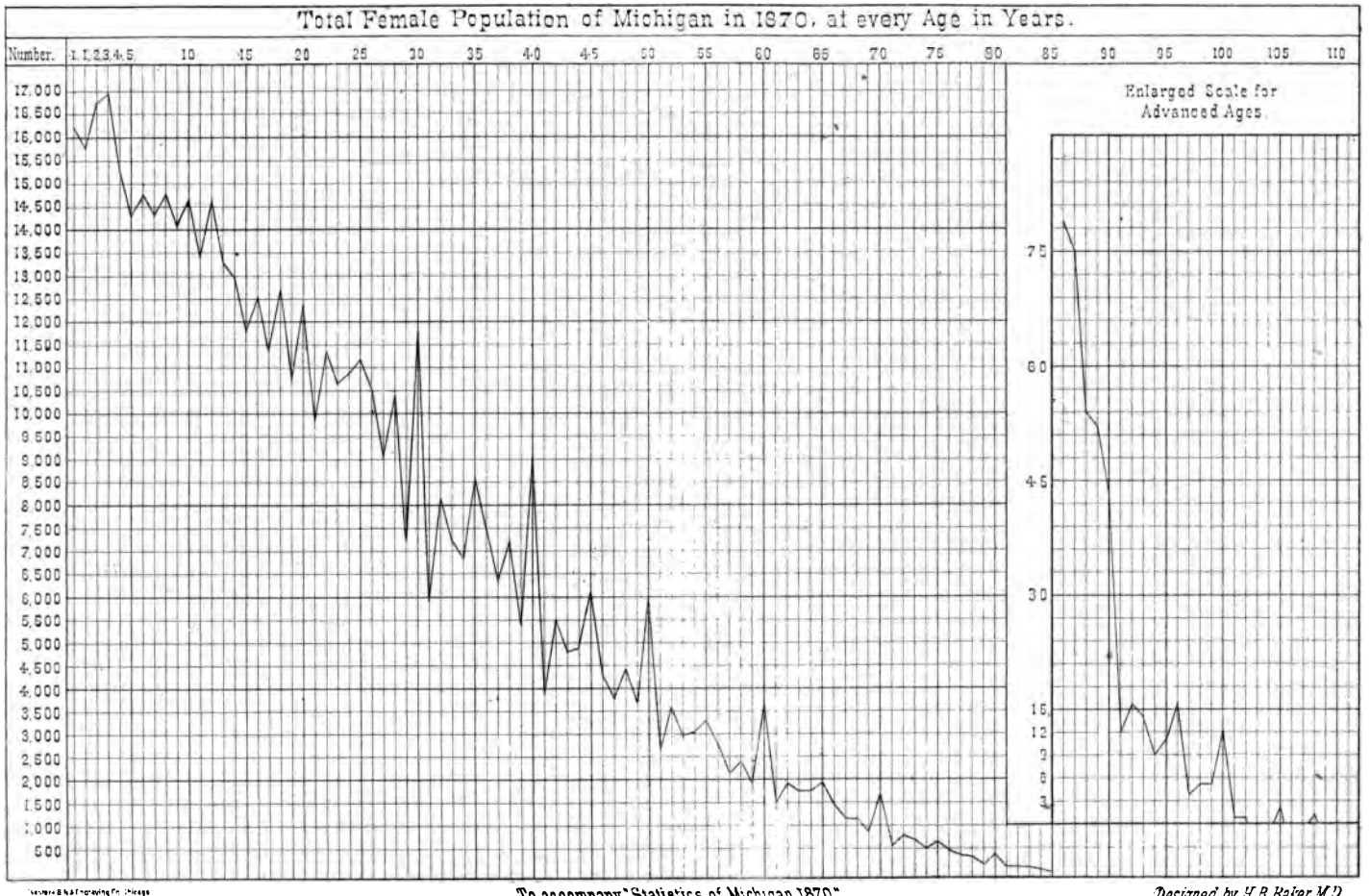
Ages	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Males	494	292	420	160	183	181	190	159	90	83	65	43	48	15	14	11	15	6
Both Sexes	892	541	781	311	368	351	338	264	169	158	119	95	91	27	30	25	24	17

Ages	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	Unk'n.	.....	.....
Males	5	5	6	4	7	1	3	.....	1	2	.....	.....	.....	1	1	212	.....	.....
Both Sexes	21	9	11	9	19	2	4	.....	1	4	.....	.....	1	1	1	363	.....	.....

TABLE [illegible]

Ages	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Females	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Both Sexes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ages	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	[illegible]	[illegible]
Females	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Both Sexes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ages	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Females	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Both Sexes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ages	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
Females	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Both Sexes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ages	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
Females	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Both Sexes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ages	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Females	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Both Sexes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ages	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111		
Females	16	4	5	5	13	1	1		1	2			1	1	1	[illegible]		
Both Sexes	21	9	11	9	18	5	5			2						[illegible]		

DIAGRAM No. 4.



To accompany "Statistics of Michigan 1870".

Designed by H.B.Baker.M.D.

Tables 5 and 6 exhibit the number of inhabitants of Michigan of each sex, and of both sexes, at every age, as returned by the Census enumerators. There is a very noticeable deficiency in the very first statement which represents the number of children aged under one month. This undoubtedly resulted from carelessness of the enumerators, and in a way which will be explained further on, in connection with the subject of births. There are other errors apparent only to those familiar with such statistics. For instance, the numbers returned at certain ages in months are such as, if believed correct, would show large numbers born in short months, and smaller numbers born in months longer by a day and which, other things equal, should show about one-thirtieth more births, when, taken in connection with other evidence, there is reason for believing that the numbers are in part displaced in a way to cause just this result. The deficiency in those aged under one month was in great part due to such displacement, which affected to some extent the statement of numbers at every age. Some of the evidence of this will also be given with the remarks on births.

Statistics of this kind are valuable somewhat in proportion as their accuracy renders it possible to employ them as bases from which by calculations to obtain answers to certain questions of importance to the people, as affecting their social or pecuniary well being. One of the most important of these questions is the one of the correct death-rate at every age, mainly for the reason that such knowledge would enable us to guard against special dangers to life at certain ages, and also for the reason that upon the death-rate is based a business which has much to do with the contentment and happiness of the people, and in which is involved millions of dollars of capital, calling out of this State annually, one or two millions of dollars for premiums for life insurance,—an amount of money, perhaps one-third as much as the total of all the State, county, township, city and village taxes for school and all other purposes in this State. The people pay this private tax, which in this case is called "premium," without any real knowledge of the justice of its rates, and will probably continue to do so until they gradually obtain a knowledge of some of the benefits to be derived from accurate statistics, when they will doubtless conclude that it would be worth to them much more than it would cost if they could have continually in their employ some person or persons as well qualified to inform them of the justice and equality of the premiums they pay, as are the actuaries now employed by insurance companies to inform them of the probable profits which they may expect for their management of the life insurance business.

If accurate statistics cannot yet be obtained, it appears to be a matter of great importance to find out the reasons why, and wherein lie the sources of

inaccuracy, in order that methods may be inaugurated which will tend towards greater accuracy in future, and also that such corrections and allowances may be made for present inaccuracies as will in some measure prevent wrong conclusions from statistics now collected.

Tables 5 and 6, and more especially Diagrams Nos. 3 and 4, reveal the fact that there are general laws which apply to some at least, of the inaccuracies in the statements of the age of the inhabitants by Census enumerators. These laws of method result from the tendency to state the age approximately in "round numbers," instead of accurately. The first general rule is that many more are stated to be aged even, than odd years. The exceptions to this rule are mainly according to another, which is that the importance and facility of expression of certain ages, such as 25, 35, 45, etc., will overcome the tendency to the first mentioned error and cause one in a contrary direction, showing a number greater than the true one at such ages. When the important age is an even year, such as 40, 50, 60, etc., the combined action of these first two rules results in a third class of errors which are so intensified as to become astonishingly manifest when the number of inhabitants is compiled by age in single years, as in Tables 5 and 6, and represented graphically as in Diagrams Nos. 3 and 4, from an examination of which it will be seen that if we were to believe the returns, we should conclude that there were more than twice as many of either sex aged 40, than there were aged 41; more aged 50 than 51; more 60 than 61, etc., etc. The statements of the numbers at these ages cannot possibly be correct.

The statements of the number of inhabitants as generally given in periods of five or ten years each, are quite materially influenced by the errors just noticed. If compiled in periods of five years, every alternate period will contain the important even year, and consequently be too large. Some persons, even among professed statisticians, continue to advocate compiling such statistics of inhabitants, deaths, etc., not by ages in single years as the writer has done, but only in periods of years, and this is the general custom. It will be readily seen that by such methods the errors described above would probably never be found or corrected, and the correct death-rate, or the true number of inhabitants by ages, would never be ascertained. The material in Table 5 was used in the construction of a "Life Table" for males, "Table VII," page 174, "Vital Statistics of Michigan, 1870," and the above described displacements of the numbers seriously marred the appearance of the table, although they did not so materially affect the statements of the "Expectation of Life" at the various ages as might at first seem probable. There are so many real inequalities in the number of inhabitants at the successive ages, that it becomes almost or quite impossible to so correct and equalize them as to represent the

true numbers living at each age. Further on, in connection with the subject of deaths, an attempt will be made in this direction, but it is much to be hoped that this exhibition and explanation of the nature of these errors will tend to prevent their occurrence to such an extent in future Censuses.

Many such errors which detract so much from the value of a Census could be avoided if the laws for collecting statistics could be framed by statisticians, instead of by politicians or legislators as has been the custom. In other words, if statistical inquiries were skillfully planned by those perfectly familiar not only with what facts it is most important to ascertain, but also with the nature of the difficulties to be overcome, we might with more confidence hope for accurate and valuable statistics in the near future.

Among the items which should not be omitted from the next Census, the following may be mentioned: A statement concerning each inhabitant as to whether married, single, a widow, or a widower. The year in which each inhabitant moved into the State, and from what State or country, excepting and specifying those born within the State.

TABLE 7.—*Exhibiting, for the State and Counties, the Number of Persons at Each Period of Age, and the Per Cent. of Persons at Each Period of Age to the Number at All Ages, in Michigan, June 1st, 1870.*

STATE AND COUNTIES.	Population Classified by Age, in Four Periods of Years. a							
	Number of Persons at Each Period.				Per Cent. of Persons at Each Period to Total of All Ages.			
	Under Twenty.	Twenty to Fifty.	Fifty to Seventy.	Seventy and Over.	Under Twenty.	Twenty to Fifty.	Fifty to Seventy.	Seventy and Over.
State	570,308	486,180	109,815	17,616	48.17	41.06	9.27	1.48
Alcona	328	336	34	3	46.40	48.27	4.88	.43
Allegan	15,829	12,984	2,876	455	49.32	40.30	8.96	1.41
Alpena	1,087	1,546	118	9	39.45	56.11	4.10	.32
Antrim	981	836	148	19	49.44	42.13	7.45	.95
Barry	10,921	8,899	2,018	323	49.28	40.15	9.11	1.45
Bay	7,441	7,476	895	81	46.82	47.03	5.63	.51
Benzie	1,018	989	205	22	46.61	42.99	9.38	1.00
Berrien	17,388	14,044	3,150	511	49.54	40.01	8.97	1.45
Branch	11,978	10,726	3,023	499	45.67	40.85	11.60	1.88
Calhoun	16,504	15,384	4,050	679	45.13	41.93	11.07	1.85
Cass	10,370	8,260	2,103	361	49.16	39.15	9.96	1.71
Charlevoix	910	671	121	21	52.81	38.94	7.02	1.21
Cheboygan	1,182	914	130	21	51.52	41.60	5.91	.95
Chippewa	850	681	122	37	50.29	40.29	7.21	2.18
Clare	102	243	21	.....	27.86	66.39	5.73	.....
Clinton	11,328	9,098	2,073	334	46.61	39.84	9.07	1.45
Delta	1,055	1,262	113	9	43.27	51.76	4.58	.36
Eaton	12,014	10,238	2,518	385	47.75	40.69	10.00	1.53
Emmet	627	442	112	29	51.81	36.52	9.25	2.39
Genesee	15,770	14,030	3,537	555	46.53	41.39	10.43	1.63
Grand Traverse	2,319	1,722	352	48	52.21	38.77	7.92	1.08
Gratiot	6,222	4,533	915	135	52.70	38.39	7.75	1.14
Hillsdale	14,642	12,767	3,625	637	46.23	40.31	11.44	2.01
Houghton	7,230	5,991	597	59	52.10	43.17	4.30	.42
Huron	4,973	3,348	652	73	54.97	37.01	7.20	.80
Ingham	12,133	10,253	2,515	361	48.02	40.58	9.95	1.42
Ionia	13,182	11,468	2,623	394	47.64	41.45	9.48	1.42
Iosco	1,333	1,660	151	19	42.14	52.48	4.77	.60
Isabella	2,128	1,674	285	19	51.92	40.76	6.94	.46
Jackson	15,860	15,303	3,720	612	44.06	43.89	10.33	1.70
Kalamazoo	14,619	13,563	3,298	582	45.59	42.30	10.28	1.81
Kalkaska	210	187	21	6	49.52	44.10	4.95	1.41
Kent	23,979	20,911	4,726	784	47.57	41.49	9.37	1.55
Keweenaw	2,286	1,678	224	18	54.35	39.89	5.32	.42

a Unknown ages excluded.

TABLE 7.—CONTINUED.

COUNTIES.	Population Classified by Age, in Four Periods of Years. a							
	Number of Persons at Each Period.				Per Cent. of Persons at Each Period, to Total of All Ages.			
	Under Twenty.	Twenty to Fifty.	Fifty to Seventy.	Seventy and Over.	Under Twenty.	Twenty to Fifty.	Fifty to Seventy.	Seventy and Over.
Lake	271	232	41	4	49.45	42.33	7.48	.73
Lapeer	10,664	8,356	1,995	327	49.96	39.15	9.34	1.53
Leelanaw	2,488	1,643	401	43	54.38	35.91	8.76	.93
Lenawee	20,284	18,840	5,474	985	44.49	41.33	12.00	2.16
Livingston	9,074	7,698	2,161	394	46.94	39.83	11.18	2.03
Mackinac	926	625	134	30	58.99	36.44	7.81	1.74
Macomb	13,730	10,280	3,037	564	49.72	37.23	10.99	2.04
Manistee	2,791	2,949	305	29	45.94	48.55	5.02	.47
Manitou	506	290	89	6	56.79	32.54	9.98	.67
Marquette	6,404	7,253	566	53	44.85	50.80	3.96	.37
Mason	1,547	1,457	230	31	47.38	44.62	7.04	.94
Mecosta	2,749	2,506	355	35	48.69	44.39	6.28	.62
Menominee	765	1,059	66	2	40.43	55.97	3.48	.10
Midland	1,544	1,481	225	33	47.03	45.11	6.85	1.00
Missaukee	60	55	15	.....	46.15	42.30	11.53	.....
Monroe	14,503	9,763	2,706	496	52.80	35.53	9.84	1.80
Montcalm	6,829	5,684	973	150	50.08	41.68	7.13	1.10
Muskegon	6,796	7,024	964	98	45.66	47.19	6.47	.65
Newaygo	3,772	2,900	552	64	51.75	39.79	7.57	.87
Oakland	18,542	16,638	4,837	888	45.32	40.67	11.82	2.17
Oceana	3,560	3,007	571	84	49.29	41.63	7.90	1.16
Ogemaw	1	10	1	.....	8.33	83.33	8.33	.....
Ontonagon	1,741	930	158	16	61.19	32.68	5.55	.56
Osceola	1,967	871	149	17	50.71	41.39	7.08	.80
Oscoda	25	41	4	.....	35.71	58.57	5.71	.....
Ottawa	13,960	10,037	2,286	367	52.38	37.66	8.57	1.37
Presque Isle	142	203	8	2	40.00	57.18	2.25	.56
Saginaw	18,911	17,251	2,634	296	48.37	44.12	6.73	.75
Sanilac	8,184	5,153	1,048	178	56.19	35.38	7.19	1.22
Schoolcraft	339	423	33	4	42.42	52.94	4.13	.50
Shiawassee	10,242	8,358	1,907	309	49.20	40.15	9.16	1.48
St. Clair	19,552	13,487	3,176	538	58.19	36.69	8.64	1.46
St. Joseph	12,221	10,846	2,751	447	46.52	41.29	10.47	1.70
Tuscola	7,186	5,275	1,093	154	52.42	38.48	7.97	1.12
Van Buren	13,893	11,777	2,710	442	48.20	40.86	9.40	1.53
Washtenaw	18,608	17,117	4,802	911	44.90	41.30	11.58	2.19
Wayne	57,380	49,898	10,249	1,511	48.20	41.91	8.61	1.26
Wexford	302	296	44	8	46.46	45.53	6.76	1.23

a Unknown ages excluded.

Table 7 exhibits the number and proportion of inhabitants in the State and in each county at ages within each of four groups. The material was first used in the compilation of the Vital Statistics of Michigan, 1870, as a basis of comparison with the deaths from consumption and certain other causes within the same ages. The table is printed here mainly for the purpose of giving an idea of the relative proportion of inhabitants within these four periods of age in the several counties. It will be seen that among the inhabitants of new counties as a rule there is quite a small proportion of old people. In several of the old counties there is quite a considerable proportion of the inhabitants at ages 50 to 70. In Chippewa county, organized in 1826, there are many Canadians, Indians, and other old settlers, and the proportion aged 70 and over is greater than the average in the State, but the proportion aged 50 to 70 is less than the average. The fact of the age of the inhabitants of new counties, and of new States, being different from that of old settled localities should be continually kept in mind by those who study, or who base assertions upon the Vital Statistics of the country as regards the death-rate at different ages, or at all ages. This point has been quite frequently overlooked, if indeed it has ever been noticed at all.

TABLE 8.—*Exhibiting, for the State and Counties, by Sex, the Number of Persons Aged 5 to 20 Years,—Primary School Ages; and the Number of Persons Aged 8 to 14 Years,—Compulsory School Ages; also, the Number of Females Aged 16 to 45 Years,—Child-bearing Ages; the Number of Males Aged 18 to 45 Years,—Military Ages; and by Sex, the Number of Persons Aged 21 Years and Over,—Voting Ages for Males, in Michigan, June 1, 1870.*

STATE AND COUNTIES	Number of Persons Aged 5 to 20 Years,—School Ages.			Number of Persons Aged 8 to 14 Years,—Compulsory School Ages.			Number of Females Aged 16 to 45 Years,—a Child-bearing Ages.	Number of Males Aged 18 to 45 years,—b Military Ages.	Number of Persons Aged 21 Years and Over,—Voting Ages for Males.		
	Total.	Males.	Females.	Total.	Males.	Females.			Total.	Males.	Females.
State	406,019	205,880	200,139	172,982	88,069	84,913	254,264	252,802	588,878	316,305	272,573
Alcona	216	106	110	96	47	49	144	210	354	219	135
Allegan	11,261	5,740	5,521	5,012	2,590	2,422	6,681	6,799	15,665	8,571	7,094
Alpena	718	398	320	269	146	123	548	1,088	1,577	1,057	520
Antrim	643	347	296	274	153	121	387	473	967	564	403
Barry	7,827	4,027	3,800	3,330	1,755	1,575	4,722	4,617	10,881	5,888	4,993
Bay	5,071	2,624	2,447	2,157	1,132	1,025	3,306	4,501	8,065	4,867	3,198
Benzie	715	348	367	291	145	146	452	520	1,109	648	461
Berrien	12,382	6,185	6,197	5,390	2,726	2,664	7,591	7,041	17,003	8,979	8,024
Branch	8,815	4,406	4,409	3,679	1,856	1,823	5,941	5,090	13,743	7,022	6,721
Calhoun	12,091	6,014	6,077	5,151	2,586	2,565	8,377	7,450	19,278	9,884	9,394
Cass	7,569	3,869	3,700	3,305	1,662	1,643	4,415	4,177	10,306	5,413	4,893
Charlevoix	642	332	310	281	155	126	318	359	769	445	324
Cheboygan	755	389	366	323	179	144	402	553	1,018	625	393
Chippewa	594	308	286	220	116	104	330	388	797	458	339
Clinton	8,003	4,109	3,894	3,421	1,772	1,649	4,860	4,618	11,060	5,813	5,247
Delta	670	324	346	273	117	156	423	877	1,320	926	394
Eaton	8,603	4,389	4,214	3,705	1,884	1,821	5,524	5,171	12,646	6,635	6,011
Emmet	436	234	202	179	91	88	247	209	540	271	269
Genesee	11,281	5,704	5,577	4,659	2,352	2,307	7,554	7,123	17,386	9,151	8,235
Gr. Traverse	1,610	850	760	719	384	335	881	878	2,013	1,106	907
Gratiot	4,302	2,227	2,075	1,955	1,027	928	2,373	2,254	5,395	2,881	2,514
Hillsdale	10,877	5,494	5,383	4,610	2,286	2,324	7,016	6,250	16,335	8,400	7,935
Houghton	4,432	2,291	2,141	1,901	971	930	2,514	3,621	6,392	3,859	2,533

a Includes those aged 16, but not 45. *b* Includes those aged 18, but not 45.

TABLE 8.—CONTINUED.

COUNTIES	Number of Persons Aged 5 to 20 Years,—School Ages.			Number of Persons Aged 8 to 14 Years,—Compulsory School Ages.			Number of Females Aged 16 to 45 years,—a Child-bearing Ages.	Number of Males Aged 18 to 45 years,—b Military Ages.	Number of Persons Aged 21 Years and Over,—Voting Ages for Males.		
	Total.	Males.	Females.	Total.	Males.	Females.			Total.	Males.	Females.
Huron	3,364	1,760	1,604	1,396	731	665	1,593	1,935	3,905	2,325	1,580
Ingham	8,741	4,519	4,222	3,580	1,823	1,757	5,606	5,134	12,633	6,553	6,080
Ionia	9,461	4,903	4,558	3,970	2,073	1,897	6,087	5,897	13,900	7,378	6,522
Iosco	908	499	409	357	196	161	638	1,097	1,725	1,122	603
Isabella	1,476	722	754	659	311	348	809	954	1,893	1,100	793
Jackson	11,545	5,852	5,693	4,652	2,338	2,314	8,025	8,599	19,273	10,510	8,763
Kalamazoo	10,695	5,339	5,356	4,420	2,330	2,190	7,304	6,905	16,755	8,800	7,955
Kent	17,419	8,761	8,658	7,400	3,763	3,637	11,107	10,722	25,339	13,551	11,788
Keweenaw	1,437	746	691	644	325	319	727	968	1,870	1,125	745
Lapeer	7,544	3,784	3,760	3,244	1,643	1,601	4,456	4,331	10,261	5,472	4,789
Leelanaw	1,767	909	858	798	432	366	885	826	2,005	1,082	923
Lenawee	14,904	7,410	7,494	6,185	3,084	3,101	10,458	9,085	24,372	12,331	12,041
Livingston	6,622	3,399	3,223	2,716	1,388	1,328	4,094	3,971	9,852	5,244	4,608
Mackinac	650	332	318	268	135	133	334	347	756	414	342
Macomb	9,772	4,944	4,828	4,297	2,173	2,124	5,664	4,970	13,355	6,899	6,456
Manistee	1,852	959	893	776	390	386	1,251	1,847	3,149	1,947	1,202
Manitou	335	180	155	167	94	73	135	164	377	220	157
Marquette	4,108	2,123	1,985	1,670	876	794	2,695	4,835	7,501	4,948	2,553
Mason	1,054	521	533	494	251	243	653	854	1,651	1,004	647
Mecosta	1,885	940	945	800	408	392	1,223	1,401	2,781	1,629	1,152
Menominee	510	294	216	185	103	82	319	859	1,057	778	279
Midland	1,019	531	488	425	206	219	681	877	1,672	987	685
Monroe	10,429	5,208	5,221	4,503	2,287	2,216	5,594	4,761	12,453	6,392	6,061
Montcalm	4,811	2,537	2,274	2,139	1,093	1,046	2,890	3,009	6,540	3,573	2,967
Muskegon	4,667	2,457	2,210	1,928	1,021	907	3,176	4,263	7,682	4,595	3,087
Newaygo	2,574	1,326	1,248	1,126	597	529	1,463	1,575	3,378	1,912	1,466
Oakland	13,955	7,072	6,883	5,610	2,828	2,782	9,158	8,584	21,334	11,167	10,167
Oceana	2,453	1,304	1,149	1,088	564	524	1,516	1,579	3,643	1,975	1,568
Ontonagon	1,188	575	613	572	282	290	491	431	1,078	568	510
Osceola	699	367	332	320	170	150	408	487	997	584	413
Ottawa	9,683	4,938	4,745	4,262	2,164	2,098	5,128	5,381	12,116	6,673	5,443
Saginaw	12,974	6,520	6,454	5,584	2,805	2,779	8,208	9,682	19,286	11,145	8,141
Sanilac	5,659	2,932	2,727	2,474	1,264	1,210	2,690	2,676	6,117	3,362	2,755
Shiawassee	7,356	3,735	3,621	3,113	1,610	1,503	4,545	4,288	10,194	5,416	4,778

a Includes those aged 16, but not 45. *b* Includes those aged 18, but not 45.

TABLE 8.—CONTINUED.

COUNTIES	Number of Persons Aged 5 to 20 Years,—School Ages.			Number of Persons Aged 8 to 14 Years,—Compulsory School Ages.			Number of Females Aged 16 to 45 years,—a Child-bearing Ages.	Number of Males Aged 18 to 45 years,—b Military Ages.	Number of Persons Aged 21 Years and Over,—Voting Ages for Males.		
	Total.	Males.	Females.	Total.	Males.	Females.			Total.	Males.	Females.
St. Clair	13,998	7,062	6,936	6,028	3,056	2,972	7,407	6,872	16,466	8,773	7,693
St. Joseph	8,943	4,504	4,439	3,806	1,921	1,885	5,797	5,419	13,516	7,074	6,442
Tuscola	5,002	2,613	2,389	2,258	1,185	1,073	2,734	2,741	6,280	3,418	2,862
Van Buren	10,044	5,114	4,930	4,472	2,308	2,164	6,306	5,845	14,399	7,574	6,825
Washtenaw	13,638	6,969	6,669	5,504	2,843	2,661	9,221	8,845	21,830	11,406	10,424
Wayne	40,391	19,982	20,409	17,474	8,739	8,735	27,202	24,400	59,172	30,383	28,789
Wexford	194	102	92	90	51	39	144	156	335	189	146
UNORGANIZED CO'S:											
Clare	66	40	26	20	11	9	37	201	261	222	39
Kalkaska	145	78	67	59	32	27	71	112	210	135	75
Lake	178	99	79	82	47	35	108	125	268	156	112
Missaukee	42	26	16	16	10	6	20	39	67	42	25
Ogemaw	--------	--------	--------	--------	--------	--------	2	7	10	8	2
Oscoda	19	9	10	7	6	1	13	31	40	31	9
Presque Isle	97	42	55	43	18	25	56	136	211	157	54
Schoolcraft	233	127	106	101	52	49	129	317	444	324	120

The numbers of persons aged 5 to 20 are given here by counties for purposes of comparison with results obtained by the annual Census, for school purposes, and with the hope that they may prove useful to the Department of Public Instruction, or to others interested in the welfare of the young who are soon to be the people of Michigan. Table 8 exhibits for the State 406,019 children aged 5 to 20, while the table in the Report of the Superintendent of Public Instruction shows only 384,554; a less number by 21,465. The School Census was taken about three months after the United States Census, and consequently should show a larger number of children by the increase for one-fourth of a year,—perhaps 2,500,—making the real difference between the School and the United States Census still greater. The law (with certain provisos) requires every parent, guardian, or person having control of a child between the ages of 8 to 14 years, to send any such child to a public school for a period of at least twelve weeks in each school year. The number of females aged 16 to 45 is exhibited by counties, mainly as a basis of computation by those engaged in studying the statistics of births, deaths, etc., in this State. All able-bodied male citizens between the ages of 18 and 45 years, except such as are exempt by the laws of the United States or of this State, are subject to military duty in case of "war, rebellion, invasion," etc. It will be seen from the last two columns of Table 8, that there were in this State 43,732 more males than females aged 21 years and over. The proportion of the sexes was very different in different counties. In several of the new counties the males were twice the number of the females at such ages.

a Includes those aged 16, but not 45. *b* Includes those aged 18, but not 45.

TABLE 9.—*Exhibiting the Total Number of Inhabitants Aged 100 Years and Over, in Michigan, June 1st, 1870; the Number in each County; the Township, City, and Ward in which each resided; and the full Name, Age at last Birthday, Sex, Color, Occupation, Birthplace, and Parent-nativity of each of such Aged Persons.*

STATE AND COUNTIES.	No. of Persons Aged 100 and Over.	RESIDENCE—by Township, City and Ward.	NAME.	Age.	Sex.	Color.	Occupation.	Birthplace.	Nativity of Parents.
STATE	33			*a*	*b*	*c*	*d*	*e*	*f*
Antrim	2	Milton	Pemanogoqua	100	Female	Indian	Keeping house	Michigan	Native.
		Milton	Legutrio, Sanwayanqua	100	Female	Indian	At home	Michigan	Native.
Branch	1	Union	Hamilton, Guis	104	Male	White	Not stated	Ireland	Foreign.
Cass	3	Howard	Moran, Margaret	100	Female	White	Not stated	Ireland	Foreign.
		La Grange	Earnest, Mary *g*	108	Female	White	Not stated	Pennsylvania	Native.
		Volinia	Lucas, Celia	105	Female	White	Not stated	Indiana	Native.
Chippewa	1	Sugar Island	Tate, Kokoni *h*	100	Female	Half-breed	At home	British America	Foreign.
Eaton	1	Walton	Miller, Dolly	100	Female	White	Not stated	Vermont	Native.
Emmet	1	Little Traverse	Meshenene, Mary A.	100	Female	Indian	At home	Michigan	Native.
Genesee	3	Burton	Lincoln, Stephen	100	Male	White	In the Poor House	Connecticut	Native.
		Davison	Walker, Matthew	101	Male	White	Farmer	Ireland	Foreign.
		Flint	Beekly, Samuel	100	Male	White	Not stated	England	Foreign.
Hillsdale	1	Adams	McDonough, John	102	Male	White	At home	Ireland	Foreign.
Ingham	1	Stockbridge	Rogers, Betsey	100	Female	White	Not stated	Connecticut	Native.
Jackson	1	Liberty	Case, Stephen *g*	100	Male	White	Not stated	New Jersey	Native.
Kent	2	Algoma	Duly, Elizabeth	100	Female	White	"Lives with son"	Maryland	Native.
		Gaines	Myres, Phebe	100	Female	White	None	New York	Native.

Lapeer	1	Lapeer City, 4th Ward	Hartman, Andrew	100	Male	White	None	New Jersey	Father Foreign, Mother Native.
Leelanaw	1	Centreville	Benanos, Paul	110	Male	Indian	None	Michigan	Native.
Livingston	1	Hamburgh	Hines, James	102	Male	White	Retired	Ireland	Foreign.
Macomb	1	Chesterfield	Laforga, Louis	105	Male	White	At home	Michigan	Native.
Marquette	1	Munising	Muckabum, Thomas	105	Male	Indian	Laborer	Michigan	Father Foreign, Mother Native.
Oceana	1	Elbridge	Peter, Susett	100	Female	Indian	Keeping house	Michigan	Native.
Saginaw	1	Zilwaukee	Doyle, Mary	100	Female	White	Keeping house	Ireland	Foreign.
St. Clair	2	Kimball	Leforest, Antwine	100	Male	White	None	Canada	Foreign.
		Port Huron City, 1st Ward	McGowen, Catherine	105	Female	White	At home	Ireland	Foreign.
Van Buren	1	Porter	Hunt, Vestine	109	Male	White	None stated	Rhode Island	Foreign.
Wayne	6	Brownstown	Halstead, Jacob	100	Male	White	Retired farmer	New York	Native.
		Nankin	Gibson, Wm.	100	Male	Black	Pauper	Georgia	Native.
		Nankin	Harper, Sarah	102	Female	White	Pauper	New York	Native.
		Romulus	Huntley, Elizabeth *g*	100	Female	White	Not stated	New York	Native.
		Detroit City, 6th Ward	Ward, Daniel *g*	102	Male	White	At home	Ireland	Foreign.
		Detroit City, 9th Ward	Martin, Ann	101	Female	White	At home	Ireland	Foreign.

a Males, seven aged 100; one, 101; three, 102; one, 104; two, 105; one, 109; and one, 110 years. Females, twelve aged 100; one, 101; one, 102; two, 105; and one, 108 years.

b Males, 16; females, 17.

c Thirteen males and twelve females, white. Two males and four females, Indian; one female half-breed; one male, black.

d Males, "farmer," one; "laborer," one "retired," one; "retired farmer," one; "in poor-house," one; "pauper," one; "at home," three: "none," three; "not stated," four. Females, "keeping house," three; "lives with son," one; "pauper," one; "at home," five; "none," one; "not stated," six.

e Native, total, 21; males 9 and females 12. Foreign, total, 12; males 7 and females 5.

f Native, total, 18; males 6 and females 12. Foreign, total, 13; males 8 and females 5. Foreign father and native mother 2.

g Blind.

h Blind and infirm.

TABLE 10.—*Exhibiting, for the Cities of Michigan, the Year of Incorporation; the Counties in which Located; the Total Population in the Years 1870, 1860, and 1850; the Increase in 1870 over 1850 and over 1860, and in 1860 over 1850; and the Relative Rank in Number of Inhabitants.*

Year of Incorporation.	Cities.	Counties in which Located.	Total Population.			Increase over Previous Censuses.						Rank.		
						Number.			Per Cent.					
			1870.	1860.	1850.	1870 over 1850.	1870 over 1860.	1860 over 1850.	1870 over 1850.	1870 over 1860.	1860 over 1850.	1870.	1860.	1850
	All Cities		280,372											
1853	Adrian	Lenawee	8,439	6,213	*a* 3,006		2,226			35.8		5	3	
1851	Ann Arbor	Washtenaw	7,363	5,097	*a* 4,868		2,266			44.4		7	4	
1859	Battle Creek	Calhoun	5,838	3,509	1,064	4,774	2,329	2,445	448.6	66.3	229.7	11	10	11
1865	Bay City	Bay	7,064	1,583			5,481			346.2		8	19	
1869	Big Rapids	Mecosta	1,237	83			1,154			1,390.3		29	24	
1861	Coldwater	Branch	4,381	2,905	*a* 2,166		1,476			50.8		19	14	
1869	Corunna	Shiawassee	1,408	684			724			105.8		28	23	
1815 *b*	Detroit	Wayne	79,603	45,619	21,019	58,584	33,984	24,600	278.7	74.2	117.0	1	1	1
1859	East Saginaw	Saginaw	11,350	3,001			8,349			278.2		4	12	
1855	Flint	Genesee	5,386	2,950	1,670	3,716	2,436	1,280	223.5	82.5	77.1	13	13	7
1867	Grand Haven	Ottawa	3,140									22		
1850	Grand Rapids	Kent	16,508	8,085	2,686	13,822	8,423	5,399	514.5	104.1	201.0	2	2	3
1869	Hillsdale	Hillsdale	3,517	2,177	1,067	2,450	1,340	1,110	229.6	61.5	104.1	20	17	10
1867	Holland	Ottawa	2,324	*a* 1,991								24		
1857	Jackson	Jackson	11,447	4,799	2,363	9,084	6,648	2,436	384.4	138.5	103.0	3	5	4
1859	Lansing	Ingham	5,244	3,074	1,229	4,015	2,170	1,845	326.6	70.5	150.1	14	11	9

1869..	Lapeer	Lapeer	1,772	*a* 2,731	.....	.....	.....	.....	.....	.....	.....	27	.....	....
1869..	Manistee	Manistee	3,343	*a* 649	.....	.....	.....	.....	.....	.....	.....	21	.....	....
1859..	Marshall	Calhoun	4,925	3,736	1,972	2,958	1,189	1,764	149.7	31.8	89.4	16	9	5
1837..	Monroe	Monroe	5,086	3,892	2,813	2,273	1,194	1,079	80.8	30.6	38.3	15	8	2
1869..	Muskegon	Muskegon	6,001	1,450	.....	.....	4,551	.....	.....	313.8	.....	9	21	....
1859..	Niles	Berrien	4,629	2,826	.....	.....	1,803	.....	.....	63.8	.....	18	15	....
1859..	Owosso	Shiawassee	2,065	1,160	.....	.....	905	.....	.....	78.0	.....	25	22	....
1861..	Pontiac	Oakland	4,872	2,575	1,681	3,191	2,297	894	189.7	89.2	53.1	17	16	6
1857..	Port Huron	St. Clair	5,977	4,371	1,584	4,893	1,606	2,787	277.3	36.7	175.9	10	6	8
1859..	Saginaw City	Saginaw	7,461	1,699	.....	.....	5,762	.....	.....	339.7	.....	6	18	....
1858..	St. Clair	St. Clair	1,790	1,530	*a* 1,729	.....	260	.....	.....	16.9	.....	26	20	....
1867..	Wyandotte	Wayne	2,731	.....	.....	.....	.....	.....	.....	.....	.....	23	.....	....
1858..	Ypsilanti	Washtenaw	5,471	3,955	*a* 3,051	.....	1,516	.....	.....	38.3	.....	12	7	....

a Includes population of township.
b Was called "City of Detroit" before it was incorporated as a city. Incorporated as a town in 1802.

TABLE 11.—*Exhibiting the Population of all Villages in Michigan of which the number of inhabitants was stated by the Assistant Marshals of the Ninth U. S. Census, June 1, 1870; Showing also the Townships and Counties in which they are situated—the Counties arranged in alphabetical order, the Villages arranged alphabetically by Counties.*

Counties and Townships in which Villages are Situated.	Villages.	Village Population in Counties and Villages.	Counties and Townships in which Villages are Situated.	Villages.	Village Population in Counties and Villages.
All villages in State		79,637	Eaton		5,148
Allegan		6,014	Bellevue	Bellevue	608
Allegan	Allegan	2,374	Carmel	Charlotte *a*	2,258
Otsego	Otsego	994	Eaton		
Gun Plain	Plainwell	1,085	Eaton Rapids	Eaton Rapids	1,217
Saugatuck	Saugatuck	1,026	Walton	Olivet	526
Wayland	Wayland	585	Vermontville	Vermontville	544
Alpena,			Genesee,		
Alpena	Alpena *a*		Fenton	Fenton	2,353
Barry		2,977	Gratiot		1,289
Hastings	Hastings *a*	1,794	Arcada	Alma	402
Thornapple	Middleville	541	Pine River	St. Louis	887
Castleton	Nashville	642	Ingham		1,657
Bay		1,243	Vevay	Mason	1,214
Portsmouth	Portsmouth	1,243	Ingham	Dansville	443
Berrien		4,207	Ionia		5,518
Benton	Benton Harbor	661	North Plains	Hubbardston	581
Oronoco	Berrien Springs	662	Ionia	Ionia	2,500
Buchanan	Buchanan	1,702	Lyons	Lyons	704
New Buffalo	New Buffalo	683	Portland	Portland	1,060
Three Oaks	Three Oaks	499	Boston	Saranac	723
Branch		1,092	Jackson		545
Quincy	Quincy	1,092	Brooklyn	Brooklyn	545
Cass		2,660	Kalamazoo		10,863
La Grange	Cassopolis	728	Ross	Augusta	608
Silver Creek	Dowagiac	1,932	Charleston	Galesburg	140

a Incorporated as a city in 1871.

TABLE 11.—CONTINUED.

Counties and Townships in which Villages are Situated.	Villages.	Village Population in Counties and Villages.	Counties and Townships in which Villages are Situated.	Villages.	Village Population in Counties and Villages.
Kalamazoo	Kalamazoo	9,182	Pentwater	Pentwater	1,294
Schoolcraft	Schoolcraft	988	OTTAWA,		
KENT		2,085	Spring Lake	Spring Lake	1,156
Lowell	Lowell	1,506	SAGINAW		2,596
Algoma	Rockford	582	Chesaning	Chesaning	721
KEWEENAW		268	Spaulding	South Saginaw	1,875
Eagle Harbor	Eagle Harbor	268	SANILAC		437
LEELANAW		238	Forester	Forester	233
Leelanaw	Northport	238		Richmondville	88
LENAWEE,			Delaware	Forestville	121
Hudson	Hudson	2,457	ST. CLAIR		1,994
MACOMB		3,062	Clay	Algonac	754
Armada	Armada	494	Cottrellville	Marine City	1,240
Richmond	Memphis	385	ST. JOSEPH		5,920
Clinton	Mt. Clemens	1,768	Burr Oak	Burr Oak	724
Lenox	New Haven	415	Nottawa	Centreville	749
MARQUETTE		6,560	Colon	Colon	898
Marquette	Marquette *a*	4,000	Constantine	Constantine	1,290
Negaunee	Negaunee	2,560	Mendon	Mendon	660
MIDLAND		1,160	Lockport	Three Rivers	1,188
Midland	Midland	1,160	White Pigeon	White Pigeon	911
MONTCALM		2,407	VAN BUREN		6,063
Eureka	Greenville *a*	1,807	Decatur	Decatur	1,418
Sidney	Stanton	600	Lawrence	Lawrence	555
MUSKEGON		842	Antwerp	Lawton	1,081
White River	Whitehall	842	Paw Paw	Paw Paw	1,428
NEWAYGO		703	South Haven	South Haven	1,581
Brooks	Newaygo	703	WASHTENAW,		
OCEANA		1,294	Dexter	Dexter	1,161

a Incorporated as a city in 1871.

Table 11 is useful, so far as it goes, in showing the population of villages, many of which will soon be asking for city charters. It is to be regretted that some Assistant Marshals neglected to separate the statement of the population of villages from that of the townships in which they were situated. These omissions also impair the value of the statement of village population in the different counties and in the State. The question of the proportion of the inhabitants of the State who reside in cities, villages, and on farms, is one worthy of a more accurate answer. It will be seen from Table 10 that the total population of the cities of the State, June 1st, 1870, was 230,372.

TABLE 12.—*Exhibiting for the Total Population, and for the Native-born Inhabitants, of Michigan, June 1st, 1870, the Parent-Nativity, and the Per Cent. of each Nativity to the Total of all Nativities.* [a]

NATIVITY OF PARENTS.	TOTAL POPULATION, JUNE 1ST, 1870.		NATIVE-BORN POPULATION, JUNE 1ST, 1870.	
	Number.	Per Cent. of Total.	Number.	Per Cent. of Total.
All Nativities	1,184,059	100.00	916,049	100.00
Both Parents Native	695,900	58.77	695,900	75.96
Both Parents Foreign	416,836	35.16	[b] 148,326	16.19
Fathers Foreign and Mothers Native	43,201	3.64	[c] 43,201	4.71
Mothers Foreign and Fathers Native	28,622	2.41	[c] 28,622	3.12
One or both Parents Native	767,728	64.83	767,728	83.80
One or both Parents Foreign	488,159	41.22	220,149	24.03

When Table 12 was first constructed the writer was disposed to consider it a very valuable one, especially for purposes of comparison with the birth-rate and death-rate of children of native and foreign parents. It is valuable, and would be extremely so if its statements were perfectly reliable; but upon a more full study of the evidence upon which the statements are based it must be confessed that there is room for doubt as to how much reliance can be placed upon them. The two columns of the schedule from which these statements were compiled were headed "Parentage," with sub-heads, "Father Foreign," "Mother Foreign," and were filled by a check-mark only when the heading of the column expressed the truth concerning a person enumerated.

[a] The material for this table is taken from Table IV., Pop. Vol. U. S. Census, 1870. The number of inhabitants is therefore not precisely the same as given elsewhere in this volume.
[b] Assuming that all foreign born had both parents foreign, and subtracting the foreign born,—268,010,—from the whole number having both parents foreign, this number results.
[c] Assuming that all persons were native born, either of whose parents was native.

No other columns were marked in cases of native parents, consequently there is no way of estimating the number of cases in which this item was omitted. Judging from the supposed importance of the subject in the minds of Assistant Marshals, and from other columns about equally distant from the names of inhabitants (and distance across the page has much to do with omissions) the number was somewhat large. There is additional evidence of omissions in the fact that on the schedule there is occasionally found cases where a person was foreign born, while opposite the names of children immediately following, who appear to be children of such foreign born person, there are no marks indicating that either parent was foreign. All such cases go to increase the number of those having native parents, the statement of the number having one or both parents native being obtained by subtracting those specified from the whole number of inhabitants. The probable errors are, therefore, a statement of the number of foreign parents too small, and of native parents too large. This is only one of numerous instances where the answer of the statistics is unreliable for the reason that the question was planned and put in a manner inadequate to secure a definite and complete statement. Such instances would soon be exceptional if plans for taking censuses were each time expected and required of the future compiler, or of the compiler of the previous census, whose efforts would not then be uselessly expended in apologies for defects in plans made frequently by politicians and others having no technical knowledge of statistics, but might be useful in pointing out sources of error and methods of avoiding them; always supposing that legislators would adopt the methods recommended by statisticians, who, other things being equal, may safely be presumed to understand the subject better than others.

Table 12 contains within itself material which in connection with other statistics may serve, to some extent, as tests of its probable accuracy. For instance, the number of foreign born inhabitants is 268,010 or 22.63 per cent. of the total population, while the number of native born inhabitants having both parents foreign was 148,326, or 16.19 per cent. of all native born population. Conversely, the native born inhabitants were 77.36 per cent of the total population, and of the native born population 75.96 per cent. had both parents native. To offset this it must be remembered, among other things, that there has not been 22.63 per cent., or even 16.19 per cent. of foreign population during the whole period of a generation. In 1860 the census showed 19.90 per cent. of the population foreign born; in 1850 only 13.80 per cent. (see Table 17.) But the subject is too complex to be decided without further data. In the meantime the statements of parent-nativity may be accepted as the nearest possible approaches to the truth.

TABLE 13.—*Population of Michigan Classified by Race and Place of Birth, showing the Number of Inhabitants Born in Each State and Territory, and Specified Foreign Country.*[a]

BIRTHPLACE.	POPULATION.			
	Total.	COLOR.		
		White.	Colored.	Indian.
All Nativities	1,184,059	[b] 1,167,284	11,849	4,926
Foreign	268,010	[b] 266,654	1,161	195
United States	916,049	900,630	10,688	4,731
Not stated	195	182	13	.....
Alabama	168	72	96	.....
Arkansas	57	44	13	.....
California	298	296	1	1
Connecticut	7,412	7,382	30	.....
Delaware	692	620	72	.....
Florida	57	37	20	.....
Georgia	189	102	87	.....
Illinois	6,055	5,983	70	2
Indiana	12,140	11,357	779	4
Iowa	1,486	1,478	8	.....
Kansas	172	162	8	2
Kentucky	1,719	675	1,044	.....
Louisiana	196	149	47	.....
Maine	3,932	3,922	10	.....
Maryland	1,265	1,062	203	.....
Massachusetts	10,839	10,803	36	.....
Michigan	507,268	498,746	3,860	4,662
Minnesota	487	480	2	5
Mississippi	101	49	52	.....
Missouri	666	538	126	2
Nebraska	36	36	.....	.....
Nevada	12	12	.....	.....
New Hampshire	3,638	3,632	1	.....

[a] The material for this table is taken from pages 328 to 342, Pop. Vol. U. S. Census 1870.
[b] Includes one Chinese and one Japanese.

TABLE 13.—CONTINUED.

BIRTHPLACE.	POPULATION.			
	Total.	COLOR.		
		White.	Colored.	Indian.
New Jersey	8,083	7,987	46	.....
New York	231,509	231,062	438	9
North Carolina	908	491	417	.....
Ohio	62,207	61,039	1,167	1
Oregon	71	71	.....	.....
Pennsylvania	28,507	28,211	295	1
Rhode Island	1,187	1,182	5	.....
South Carolina	220	103	117	.....
Tennessee	687	344	343	.....
Texas	65	65	.....	.....
Vermont	14,445	14,434	11	.....
Virginia and West Virginia	2,984	1,791	1,193	.....
Wisconsin	5,986	5,920	28	38
Total of Territories	215	161	50	4
Arizona	1	1	.....	.....
Colorado	19	19	.....	.....
Dakota	7	4	.....	3
District of Columbia	157	109	48	.....
Idaho	.....	.....	.....	.....
Indian	6	6	.....	.....
Montana	3	3	.....	.....
New Mexico	7	5	2	.....
Utah	8	8	.....	.....
Washington	4	4	.....	.....
Wyoming	3	2	.....	1
Foreign Countries	268,010	[a] 266,654	1,161	195
Not stated	2	2	.....	.....
Africa	37	35	2	.....
Asia	39	38	1	.....
Atlantic Islands	13	13	.....	.....
Australasia	38	38	.....	.....

[a] Includes one Chinese and one Japanese.

TABLE 13.—CONTINUED.

BIRTHPLACE.	POPULATION.			
	Total.	COLOR.		
		White.	Colored.	Indian.
Austria (proper)	795	795	.....	.....
Belgium	882	882	.....	.....
Bohemia	1,179	1,179	.....	.....
British America	89,590	88,275	1,120	195
Not stated	250	238	.....	12
Canada	87,487	86,185	1,119	183
New Brunswick	1,021	1,021	.....	.....
Newfoundland	37	37	.....	.....
Nova Scotia	795	794	1	.....
China	4	[a] 4	.....	.....
Cuba	13	12	1	.....
Denmark	1,354	1,354	.....	.....
Europe (not specified)	221	216	5	.....
France	3,121	3,120	1	.....
Germany	64,143	64,143	.....	.....
Not specified	4,416	4,416	.....	.....
Baden	4,437	4,437	.....	.....
Bavaria	6,164	6,164	.....	.....
Brunswick	86	86	.....	.....
Hamburg	160	160	.....	.....
Hanover	1,243	1,243	.....	.....
Hessen	2,935	2,935	.....	.....
Lubeck	5	5	.....	.....
Mecklenburg	5,202	5,202	.....	.....
Nassau	228	228	.....	.....
Oldenburg	54	54	.....	.....
Prussia (not specified)	28,660	28,660	.....	.....
Saxony	1,313	1,313	.....	.....
Weimer	82	82	.....	.....
Wurtemberg	8,658	8,658	.....	.....
Great Britain and Ireland	86,200	86,194	6	.....
Not specified	26	24	2	.....
England	35,051	35,047	4	.....
Ireland	42,013	42,013	.....	.....
Scotland	8,552	8,552	.....	.....

[a] One Chinese.

TABLE 13.—CONTINUED.

BIRTHPLACE.	POPULATION.			
	Total.	COLOR.		
		White.	Colored.	Indian.
Wales	558	558	.....	.....
Greece	3	3	.....	.....
Holland	12,559	12,559	.....	.....
Hungary	144	144	.....	.....
Italy	110	110	.....	.....
Japan	1	[a] 1	.....	.....
Mexico	25	22	3	.....
Norway	1,516	1,516	.....	.....
Pacific Islands	2	2	.....	.....
Poland	974	974	.....	.....
Portugal	31	31	.....	.....
Russia	194	194	.....	.....
Sandwich Islands	6	6	.....	.....
South America	16	16	.....	.....
Spain	34	34	.....	.....
Sweden	2,406	2,406	.....	.....
Switzerland	2,116	2,116	.....	.....
Turkey	17	17	.....	.....
West Indies	115	93	22	.....
At sea	160	160	.....	.....

[a] One Japanese.

TABLE 14.—*Exhibiting the number of Persons in Michigan for the Year ending June 1, 1870, engaged in each selected Occupation and class of Occupations, with distinctions of Age, Sex, and Nativity, being Table XXX., Page 740, Vol. 1, U. S. Census, 1870, slightly modified.*

OCCUPATIONS.	PERSONS OCCUPIED.																			
		AGE AND SEX.						SELECTED NATIVITY.												
		10 to 15.		16 to 59.		60 and over.														
	Number.	M.	F.	M.	F.	M.	F.	United States.	Germany.	Ireland.	England and Wales.	Scotland.	Sweden, Norway, and Denmark.	France.	Other North of Europe.	Italy.	Other South of Europe.	British America.	China and Japan.	Other and unknown.
POPULATION AGED 10 YEARS AND OVER	873,763	83,737	80,738	345,556	307,489	31,065	25,128	628,019	58,814	33,896	32,674	7,842	4,888	2,862	12,709	101	2,150	86,774	2	3,082
ALL OCCUPATIONS	404,164	7,045	2,296	319,569	54,647	20,103	504	286,629	32,282	20,927	17,717	4,647	2,837	1,619	2,611	57	1,470	31,105	2	2,271
AGRICULTURE	187,211	5,684	26	165,021	136	16,331	13	144,717	12,824	6,680	8,000	1,703	498	566	1,127	15	244	10,781	..	556
Agricultural laborers	64,885	5,684	26	57,875	21	1,279	.....	53,421	2,803	1,515	1,817	402	189	144	124	..	71	4,068	..	316
Dairymen and dairywomen	5	.....	.....	4	.....	1	.....	2	2	1	.....	..	....	...	.....	..	...	.....	..	.....
Farmers and planters	121,558	.....	.....	106,509	112	14.924	13	91,018	9,348	5,067	6,044	,261	309	401	997	14	166	6,673	..	240
Farm and plantation overseers	9	.....	.....	9	.....	.....	.....	5	1	1	1	..	....	...	.....	..	...	1	..	.....
Gardeners, nurserymen, and vine-growers	686	.....	.....	506	3	127	.....	194	161	65	122	38	....	21	6	1	7	21	..	.....
PROFESSIONAL AND PERSONAL SERVICES	104,728	694	2,174	50,470	49,876	1,590	424	72,243	7,952	8,030	2,912	974	1,101	432	800	21	586	9,325	..	352
Barbers and hairdressers	705	2	1	663	31	8	.....	554	76	3	11	7	....	8	3	..	...	37	..	3
Billiard and bowling saloon-keepers and employes	59	.....	.....	59	.....	.....	.....	45	6	2	2	..	....	1	.....	..	...	3	..	.....
Boarding and lodging house keepers	527	.....	.....	323	167	27	10	265	31	73	40	12	19	7	.....	..	...	68	..	11
Clergymen	1,430	.....	.....	1,299	.....	131	.....	996	164	35	91	17	3	13	27	..	9	56	..	19
Domestic servants	49,005	127	2,125	2,144	44,164	24	401	41,388	1,755	1,749	686	222	213	101	148	6	116	2,456	..	165

Hotel and restaurant keepers and employes	3,457	6	5	3,245	150	50	1	1,974	565	248	175	38	17	41	15	1	13	337	..	33
Journalists	133	.....	.....	130	.....	3	.....	109	7	4	5	2	.....	.....	.....	.....	.....	6	..	.....
Laborers	36,034	527	9	34,407	55	1,036	.....	16,033	4,812	5,365	1,496	539	843	229	568	8	428	5,627	..	86
Launderers and laundresses	482	.....	2	17	460	3	.....	225	31	135	22	6	1	2	1	.....	3	56	..	.....
Lawyers	1,167	.....	.....	1,131	.....	36	.....	1,033	10	58	21	6	.....	.....	2	.....	1	35	..	1
Livery-stable keepers and hostlers	757	5	.....	747	.....	5	.....	578	35	38	28	7	.....	.....	5	.....	1	64	..	1
Officials and employes (civil) of Government	1,722	.....	.....	1,660	13	49	.....	1,395	61	74	64	24	2	3	5	.....	5	83	..	6
Physicians and surgeons	2,034	.....	.....	1,874	13	142	5	1,624	80	37	68	37	.....	5	9	.....	4	162	..	8
Soldiers (U. S. A.)	330	.....	.....	330	.....	.....	.....	206	38	54	13	.....	1	1	1	.....	.....	13	..	3
Teachers (not specified)	4,708	1	28	716	2,946	16	1	4,174	109	61	61	30	1	5	13	.....	3	239	..	12
Teachers of painting, dancing, and music	351	.....	3	122	217	7	2	278	25	3	24	3	.....	2	.....	2	.....	12	..	2
TRADE AND TRANSPORTATION	29,588	147	4	28,735	88	611	3	20,762	2,731	1,547	1,219	503	182	197	171	10	164	1,985	2	115
Traders and dealers	10,077	2	.....	9,816	19	239	1	7,544	1,024	354	377	120	17	92	43	3	55	416	1	31
Hucksters, peddlers, and commercial travelers	1,246	2	.....	1,224	1	19	.....	666	314	76	60	16	.....	28	7	.....	9	65	..	5
Clerks, salesmen, and accountants (in stores)	6,539	80	3	6,150	58	247	1	4,983	461	155	238	106	19	23	35	1	51	443	..	24
In banking and brokerage of money and stocks	492	1	.....	478	.....	13	.....	447	11	5	11	8	1	2	.....	.....	.....	5	..	2
In insurance	562	.....	.....	550	.....	12	.....	510	9	6	6	6	.....	2	1	.....	2	20	..	.....
Officials and employes of express companies	153	.....	.....	153	.....	.....	.....	115	3	8	115	.....	.....	.....	.....	.....	2	10	..	.....
Officials and employes of railroad companies	3,553	15	.....	3,520	.....	17	1	2,303	371	366	136	120	87	11	6	5	13	124	1	10
Officials and employes of street railroad companies	41	.....	.....	41	.....	.....	.....	20	6	3	2	1	.....	1	.....	.....	.....	8	..	.....
Officials and employes of telegraph companies	298	8	.....	286	4	.....	.....	251	9	6	9	2	.....	.....	.....	.....	.....	21	..	.....
Carmen, draymen, teamsters, etc.	2,939	21	.....	2,879	.....	39	.....	1,752	291	306	150	37	15	16	28	.....	24	286	..	34

a In this column the numbers opposite each CLASS of occupations are taken from Table XXVIII., Page 698, Vol. 1, U. S. Census, 1870, and the numbers opposite specified occupations are obtained by subtracting the total of all specified nativities from the total number of persons employed in each occupation.

TABLE 14.—CONTINUED.

OCCUPATIONS.	PERSONS OCCUPIED.																			
		AGE AND SEX.						SELECTED NATIVITY.												
		10 to 15.		16 to 59.		60 and over.														
	Number.	M.	F.	M.	F.	M.	F.	United States.	Germany.	Ireland.	England and Wales.	Scotland.	Sweeden, Norway, and Denmark.	France.	Other North of Europe.	Italy.	Other South of Europe.	British America.	China and Japan.	a Other and unknown.
Sailors, steamboatmen, watermen, etc.	2,445	6	.....	2,432	.....	7	.....	1,364	89	194	146	71	37	11	37	1	3	489	..	3
MANUFACTURES AND MINING	82,637	520	92	75,343	5,047	1,571	64	48,907	9,275	4,670	5,586	1,467	1,046	424	513	11	476	9,014	..	1,248
Bakers	509	2	.....	497	.....	10	.....	189	165	23	44	16	3	8	11	....	6	43	..	1
Blacksmiths	4,730	14	.....	4,575	.....	141	.....	2,855	523	273	309	72	38	24	31	..	24	558	..	25
Bookbinders and finishers	98	3	.....	84	6	5	.....	77	6	.....	5	2	....	1	2	..	..	5	..	.....
Boot and shoe makers	3,605	2	.....	3,435	2	166	.....	1,875	677	258	246	56	25	38	46	2	22	352	..	13
Brewers and maltsters	438	4	.....	431	1	2	.....	105	242	16	46	3	2	6	2	..	3	13	..	.....
Brick and stone masons, marble and stone cutters	3,585	3	.....	3,425	.....	107	.....	2,180	487	255	299	59	12	14	23	1	17	177	..	11
Brick and tile makers	983	19	.....	954	.....	10	.....	529	163	46	79	13	29	5	8	..	8	102	..	1
Butchers	1,381	8	.....	1,354	.....	19	.....	633	397	46	166	19	3	9	17	1	18	61	..	11
Cabinet-makers and upholsterers	1,442	14	.....	1,392	3	33	.....	788	285	110	61	18	6	8	18	..	56	90	..	2
Car, carriage, and wagon makers	1,799	.....	.....	1,751	.....	48	.....	1,207	226	51	85	27	5	15	17	..	8	140	..	8
Carpenters and joiners	14,698	14	.....	14,229	.....	450	.....	10,185	1,211	400	588	300	77	65	116	..	98	1,509	..	49
Cigar-makers and tobacco-workers	604	19	5	559	19	2	.....	238	295	6	29	1	1	6	.....	..	6	22	..	.....
Clerks and book-keepers (in manufacturing establishments)	112	1	.....	107	3	1	.....	80	8	.....	12	4	....	1	1	..	..	6	..	.....
Confectioners	106	.....	.....	104	1	2	.....	42	36	2	13	6	....	3	.....	..	..	6	..	.....
Coopers	2,116	2	.....	2,014	.....	101	.....	1,481	214	108	48	15	5	18	10	..	6	199	..	15

Cotton and woolen mill operatives	2,045	45	18	1,870	102	9	1	1,500	159	42	83	28	21	3	10	....	12	169	..	18
Curriers, tanners, and leather-finishers	450	1	.....	442	.....	7	.....	205	140	28	13	11	5	..	7	....	..	41	..	.....
Distillers and rectifiers of liquors	10	.....	.....	10	.....	.....	.....	7	1	1	.....	....	....	..	.....	....	..	1	..	.....
Fishermen and oystermen	1,075	6	.....	1,056	.....	13	.....	616	61	73	28	22	34	1	.....	....	..	192	..	48
Harness and saddle makers	1,022	3	.....	1,006	.....	13	.....	710	105	30	50	10	5	5	6	....	5	93	..	3
Hat and cap makers	6	.....	.....	5	1	.....	.....	4	1	1	.....	....	....	..	.....	....	..	.....	..	.....
Iron and steel workers	1,314	9	.....	1,291	.....	14	.....	766	132	158	127	36	9	6	5	....	6	65	..	4
Lumbermen, raftsmen, and wood-choppers	2,341	3	.....	2,320	.....	18	.....	1,323	86	83	45	34	11	3	7	1	1	639	..	109
Machinists	1,130	1	.....	1,119	.....	10	.....	689	95	59	126	54	7	15	3	....	10	69	..	3
Millers	1,585	5	.....	1,531	.....	49	.....	1,197	99	25	126	27	4	8	22	....	4	70	..	3
Milliners, dress, and mantua-makers	2,905	.....	28	1	2,869	.....	7	2,344	47	115	102	27	....	..	8	....	4	246	..	12
Miners	3,426	26	.....	3,391	1	8	.....	233	266	937	1,521	43	332	8	14	....	10	61	..	1
Painters and varnishers	2,725	8	1	2,659	.....	57	.....	1,971	195	90	202	29	13	15	12	....	9	188	..	11
Paper-mill operatives	164	6	16	119	19	4	.....	93	23	16	9	2	....	..	4	....	1	16	..	.....
Plasterers	502	.....	.....	497	.....	5	.....	269	60	68	40	7	1	5	2	....	10	37	..	8
Plumbers and gas-fitters	137	.....	.....	137	.....	.....	.....	64	9	24	10	16	....	1	.....	....	..	13	..	.....
Printers	889	12	1	858	14	9	.....	668	59	25	26	6	1	3	6	....	13	81	..	1
Quarrymen	44	.....	.....	44	.....	.....	.....	14	3	5	2	....	1	..	.....	....	..	19	..	.....
Saw-mill operatives	10,856	118	.....	10,214	2	22	.....	4,886	1,174	519	245	155	334	54	17	1	22	2,265	..	684
Ship-riggers, calkers, carpenters, and smiths	597	.....	.....	598	.....	4	.....	202	23	34	57	52	5	6	1	....	..	216	..	1
Tailors, tailoresses, and seamstresses	3,121	2	8	1,217	1,829	42	23	1,702	555	260	156	61	15	17	37	....	41	267	..	10
Tinners	870	2	.....	863	1	4	.....	571	116	32	41	8	3	10	14	2	7	65	..	1
Wheelwrights	583	1	.....	558	.....	24	.....	454	21	7	16	8	2	1	.....	....	1	73	..	.....

a In this column the numbers opposite each CLASS of occupations are taken from Table XXVIII, Page 1698, Vol. 1, U. S. Census, 1870, and the numbers opposite specified occupations are obtained by subtracting the total of all specified nativities from the total number of persons employed in each occupation.

"NOTE.—The smaller and less important of the specific occupations have, for the sake of brevity, been omitted from this table. The lines for 'Agriculture,' for 'Professional and Personal Services,' for 'Trade and Transportation,' and for 'Manufacturers and Mining' are, however, complete, including all the occupations of their respective classes, whether here enumerated or not. The line for 'All Occupations' gives the sum of these four classes. It follows that the occupations specified under each class do not make up the total of the class, nor do all the occupations specified make up the total of 'All Occupations.'"

For occupations not specified above see Table 15. For important modifications to statements of this table made on page xlviii, see page liv.

TABLE 15.—*Exhibiting the Occupations and the Number of Persons employed in each Occupation not specified in Table 14.*

OCCUPATIONS NOT SPECIFIED IN TABLE 14.	Number of Persons.	OCCUPATIONS NOT SPECIFIED IN TABLE 14.	Number of Persons.
TOTAL OF ALL CLASSES	12,878	Musicians (professional)	180
AGRICULTURE	118	Naturalists	9
Apiarists	2	Nurses	105
Florists	1	Officials of the army and navy, U. S.	26
Stock-drovers	115	Officials of companies (not specified)	114
PROFESSIONAL AND PERSONAL SERVICES	1,827	Painters	81
Actors	44	Scavengers	1
Apprentices to learned professions	6	Sculptors	5
Apprentices to barbers	9	Sextons	26
Apprentices to dentists	2	Short-hand writers	1
Architects	36	Showmen and showwomen	53
Artists (not specified)	56	Veterinary surgeons	66
Auctioneers	60	Whitewashers	26
Authors and lecturers	5	TRADE AND TRANSPORTATION	1,242
Bath-house keepers	1	Agents	204
Bill-posters	12	Apprentices in stores	7
Boot-blacks	14	Bar-keepers	306
Chemists, practicing	20	Employes of trading and transportation co's.	15
Chiropodists	1	Laborers	176
Claim agents	148	Milkmen and milkwomen	50
Clerks and copyists	50	Newspaper criers and carriers	11
Dentists	259	Officials of trading and transportation co's	45
Designers and draughtsmen	14	Packers	37
Employes of companies (not specified)	15	Pawnbrokers	17
Engineers, civil	110	Porters in stores and warehouses	220
Hunters and trappers	40	Stewards and stewardesses	40
Intelligence-office keepers	4	Toll-gate and bridge-keepers	71
Inventors	3	Undertakers	35
Janitors	57	Weighers, gaugers, and measurers	7
Land surveyors	107	MANUFACTURING AND MINING	9,185
Librarians	4	Agricultural implement makers	60
Messengers	152	Apprentices (not specified)	342
Midwives	5	Basket-makers	114

TABLE 15.—CONTINUED.

OCCUPATIONS NOT SPECIFIED IN TABLE 14.	Number of Persons.	OCCUPATIONS NOT SPECIFIED IN TABLE 14.	Number of Persons.
Belting-factory operatives	8	Mast, spar, oar, and block-makers	6
Bleachers, dyers, and scourers	29	Mattress-makers	1
Blind, door, and sash makers	269	Meat and fruit presv'ng establishm't employes	6
Boat-makers	23	Meat-packers, curers, and picklers	18
Box-factory operatives	66	Mechanics (not specified)	152
Brass founders and workers	20	Mineral-water makers	12
Bridge builders and contractors	81	Mirror and picture-frame makers	8
Broom and brush makers	184	Morocco dressers	5
Builders and contractors (not specified)	141	Musical instrument makers (not specified)	4
Candle, soap, and tallow makers	28	Officials of manufacturing companies	85
Carpet-makers	216	Officials of mining companies	5
Charcoal and lime burners	85	Oil-refinery operatives	3
Cheese-makers	64	Organ-makers	11
Clock-makers	2	Paper-hangers	8
Copper-workers	54	Pattern-makers	78
Daguerreotypists and photographers	337	Piano-forte makers	2
Die-sinkers and stamp-makers	10	Plaster-molders	1
Employes of manufacturing establishments	189	Potters	47
Engineers and firemen	1,717	Powder-makers	6
Engravers	43	Print-works operatives	1
Fertilizer establishment operatives	36	Publishers of books, maps, and newspapers	31
File-makers, cutters, and grinders	18	Pump-makers	100
Flax-dressers	2	Quartz and stamp-mill laborers	137
Fur-workers	4	Rag-pickers	3
Gas-works employes	22	Railroad builders and contractors	79
Gilders	32	Roofers and slaters	23
Glass-works operatives	13	Rope and cordage makers	11
Glove-makers	19	Sail and awning makers	41
Glue-makers	1	Salt-makers	351
Gold and silver-workers	163	Sawyers	542
Gun and lock smiths	164	Sewing-machine operators	18
Hair cleaners and dressers	17	Shingle and lath makers	757
Hoop-skirt makers	14	Shirt, cuff, and collar makers	11
House builders and contractors	5	Stave, shook, and heading makers	288
Knitting and hosiery mill operatives	13	Steam-boiler makers	213
Manufacturers	1,294	Steam-engine makers	52

TABLE 15.—CONTINUED.

OCCUPATIONS NOT SPECIFIED IN TABLE 14.	Number of Persons.	OCCUPATIONS NOT SPECIFIED IN TABLE 14.	Number of Persons.
Stove, furnace, and grate makers	20	Type-founders and cutters	1
Straw-workers	3	Umbrella and parasol makers	9
Sugar-makers and refiners	2	Whip-makers	2
Tool and cutlery makers	26	Window-shade makers	2
Trunk and valise makers	37	Wire-makers and workers	17
Truss-makers	6	Wood-turners and carvers	205

After the first page of Table 14 was printed, Vol. 3 of United States Census was received which contained the following statement of errors in Table XXX, Volume I. United States Census, from which Table 14 is taken:—"In preparing for the press the Statistics of Occupations contained in the present volume, and in the volume on Population, the number of 'domestic servants,' females, between the ages of 16 and 59, in the city of Detroit, was, by a clerical error, made to appear 27,146, instead of 2,746. This error was carried through the line of 'domestic servants,' for that city, and into the totals of the State, and the United States."

The following outline of the first part of Table 14 contains the proper figures in the columns corrected. All the columns blank in this outline remain as appears in the table on page xlviii.

Outline of first part of Table 14,—page xlviii,—correcting an error affecting the three columns in which the figures are placed:

OCCUPATIONS.	PERSONS OCCUPIED.							
	NUMBER.	Age and Sex.						United States.
		10 to 15.		16 to 59.		60 and Over.		
		M.	F.	M.	F.	M.	F.	
ALL OCCUPATIONS	379,764	.....	.....	.....	80,247	.....	.....	262,229
PROFESSIONAL & PERSONAL SERVICES	80,328	.....	.....	.....	24,976	.....	.....	47,848
Domestic Servants	24,605	.....	.....	.....	19,784	.....	.....	16,988

TABLE 16.—*Exhibiting, for the several Counties of Michigan, their relative Rank as regards Number of Inhabitants; and for the State and by Counties, the Total Population, the Total White Population and the Total Population of Michigan other than White, at the times of the several United States Censuses of 1850, 1860, and 1870.*

STATE AND COUNTIES.	Rank.			Total Population.			White Population.			Population other than White.		
	1870	1860	1850	1870.	1860.	1850.	1870.	1860.	1850.	1870.	1860.	1850
State	....	....	....	1,184,282	749,113	397,654	1,166,842	736,142	395,071	17,440	12,971	2583
Alcona [1]	64	[a] 56	....	696	185	.....	696	185	.....	.....	.....	....
Allegan	12	22	26	39,105	16,087	5,125	31,675	15,923	5,120	430	164	5
Alpena [1, 2]	51	55	....	2,756	290	.....	2,756	290	.....	.....	.....	....
Antrim [1, 3]	56	[b] 57	....	1,985	179	.....	1,915	178	.....	70	1	....
Barry	25	26	28	22,200	13,858	5,072	22,114	13,785	5,033	86	73	39
Bay [4]	30	38	....	15,900	3,164	.....	15,700	3,106	.....	200	58	....
Benzie [1, 5]	54	....	....	2,184	.....	.....	2,163	.....	.....	21	.....	....
Berrien	10	13	16	35,104	22,378	11,417	34,513	21,931	11,178	591	447	239
Branch	21	16	13	26,227	20,981	12,472	26,184	20,948	12,456	43	33	16
Calhoun	8	6	6	36,571	29,564	19,162	35,955	29,180	18,955	616	384	207
Cass	27	17	17	21,096	17,721	10,907	19,259	16,291	10,518	1,837	1,430	389
Charlevoix [1, 6]	58	....	....	1,724	.....	.....	1,502	.....	.....	222	.....	....
Cheboygan [1]	53	54	....	2,197	517	.....	1,120	393	.....	1,077	124	....
Chippewa	60	44	32	1,690	1,603	898	883	1,351	890	807	252	8
Clinton	24	25	27	22,851	13,916	5,102	22,802	13,902	5,100	49	14	2
Delta [1, 7]	52	[c] 47	....	2,441	1,172	.....	2,422	1,052	.....	19	120	....
Eaton	23	21	21	25,163	16,476	7,058	25,091	16,454	7,055	72	22	3
Emmet [1]	61	48	....	1,211	1,149	.....	107	123	.....	1,104	1,026	....
Genesee	11	12	14	33,895	22,498	12,031	33,762	22,407	12,003	133	91	28
Gd. Traverse [1, 6]	44	46	....	4,443	1,286	.....	4,428	1,243	.....	15	43	....
Gratiot [4]	37	34	....	11,808	4,042	.....	11,770	4,024	.....	38	18	....
Hillsdale	14	9	7	31,688	25,675	16,159	31,624	25,642	16,153	64	33	6

[1] In 1850 Mackinac included Alcona, Alpena, Antrim, Charlevoix, Cheboygan, Crawford, Delta (including Menominee), Emmet, Grand Traverse, Iosco, Kalkaska, Leelanaw (including Benzie), Manitou, Missaukee, Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon, and Wex[illegible]
[2] In 1860 Alpena i[illegible] [illegible]nda, Otsego [illegible]
[3] In 187[illegible]
and Otsego.
[4] In 1850 Saginaw included Bay, Clare, Gratiot, Gladwin, and Isabella.
[5] In 1860 Leelanaw included Benzie.
[6] In 1860 Grand Traverse included Charlevoix and Kalkaska.
[7] In 1860 Delta included Menominee.
[a] Organized in 1869.
[b] Organized in 1868.
[c] Organized in 1861.

TABLE 16.—Continued.

Counties.	Rank.			Total Population.			White Population.			Population other than White.		
	1870	1860	1850	1870.	1860.	1850.	1870.	1860.	1850.	1870.	1860.	1850
Houghton [8]	34	30	34	13,882	9,234	708	13,763	8,893	707	119	341	1
Huron	38	37	39	9,048	3,165	210	8,992	3,164	210	56	1	....
Ingham	22	18	19	25,268	17,435	8,631	25,102	17,398	8,606	166	37	25
Ionia	16	20	20	27,675	16,682	7,597	27,605	16,612	7,589	70	70	8
Iosco [1, 9]	49	58	....	3,163	175	.....	3,149	175	.....	14	.....	....
Isabella [4, 10]	46	45	....	4,113	1,443	.....	4,095	595	.....	18	848	....
Jackson	9	7	5	36,040	26,671	19,431	35,643	26,486	19,346	397	185	85
Kalamazoo	13	10	11	32,065	24,646	13,179	31,542	24,327	13,080	523	319	99
Kent [11]	2	5	15	50,410	30,716	12,016	50,248	30,590	11,982	162	126	34
Keweenaw [8]	45	--	....	4,206	.....	.....	4,201	.....	.....	5	.....	....
Lapeer	26	24	22	21,342	14,754	7,029	21,258	14,685	7,007	84	69	22
Leelanaw [1, 5]	43	[a] 41	....	4,577	2,158	.....	4,046	1,527	.....	531	631	....
Lenawee	3	3	4	45,601	38,112	26,372	45,197	37,861	26,280	404	251	92
Livingston	29	19	10	19,335	16,851	13,485	19,298	16,825	13,481	37	26	4
Mackinac [1]	59	42	29	1,715	1,938	3,598	1,426	1,011	3,561	289	927	37
Macomb	17	11	8	27,619	22,343	15,530	27,517	22,730	15,501	102	63	29
Manistee [12, 13]	41	50	....	6,074	975	.....	6,069	971	.....	5	4	....
Manitou [1]	62	49	....	891	1,042	.....	891	862	.....	.....	180	....
Marquette	33	39	[b] 40	14,278	2,821	136	14,155	2,734	136	123	87	....
Mason [14]	48	52	[c] 41	3,266	831	93	3,046	419	93	220	412	....
Mecosta [11, 15]	42	51	....	5,645	970	.....	5,523	965	.....	122	5	....
Menominee [1, 7]	57	--	....	1,895	.....	.....	1,870	.....	.....	25	.....	....
Midland [16]	47	53	[c] 42	3,283	801	65	3,283	800	64	.....	1	1
Monroe	18	14	9	27,475	21,593	14,698	27,399	21,564	14,642	76	29	56
Montcalm	36	35	33	13,641	3,968	891	13,593	3,957	891	48	11	....
Muskegon [13, 17]	31	36	....	14,892	3,947	.....	14,852	3,923	.....	40	24	....
Newaygo	39	40	[d] 35	7,292	2,760	510	7,274	2,661	509	18	99	1
Oakland	5	2	2	40,906	38,261	31,270	40,446	37,952	31,206	460	309	64
Oceana [17]	40	43	[c] 37	7,222	1,816	300	6,651	1,286	281	571	580	19

[8] In 1850 and 1860 Houghton included Keweenaw.
[1] In 1850 Mackinac included Alcona, Alpena, Antrim, Charlevoix, Cheboygan, Crawford, Delta (including Menominee), Emmet, Grand Traverse, Iosco, Kalkaska, Leelanaw (including Benzie), Manitou, Missaukee, Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon and Wexford.
[9] In 1860 Iosco included Crawford.
[4] In 1850 Saginaw included Bay, Clare, Gratiot, Gladwin, and Isabella.
[10] In 1860 Isabella included Clare.
[11] In 1860 Kent included Mecosta.
[5] In 1860 Leelanaw included Benzie.
[12] In 1860 Manistee included Missaukee & Wexford.
[13] In 1850 Ottawa included Lake, Manistee Osceola, and part of Muskegon.
[14] In 1860 Mason included Lake.
[15] In 1860 Mecosta included Osceola.
[7] In 1860 Delta included Menominee.
[16] In 1860 Midland included Gladwin, Roscommon, and Ogemaw; and in 1870 Gladwin and Roscommon.
[17] In 1850 Muskegon was included in Oceana and Ottawa.
[a] Organized in 1863.
[b] Not organized until 1851.
[c] Organized in 1855.
[d] Organized in 1859.

TABLE 16.—Continued.

COUNTIES.	Rank.			Total Population.			White Population.			Population other than White.		
	1870	1860	1850	1870.	1860.	1850.	1870.	1860.	1850.	1870.	1860.	1850
Ontonagon	50	33	[a] 36	2,846	4,568	389	2,824	4,544	383	22	24	6
Osceola [15]	55	[b] 60	...	2,104	27	.....	2,103	27	.....	1	.....	....
Ottawa [13, 17]	9	27	24	26,650	13,215	5,587	26,559	13,167	5,548	91	48	39
Saginaw [4]	6	28	30	39,098	12,693	2,609	38,691	12,557	2,609	407	136	....
Sanilac	32	31	31	14,565	7,599	2,112	14,530	7,599	2,112	35	.....	....
Shiawassee	28	29	25	20,822	12,349	5,230	20,790	12,334	5,230	32	15	....
St. Clair	7	8	18	36,759	26,604	10,420	36,697	26,551	10,396	62	53	24
St. Joseph	20	15	12	26,272	21,262	12,725	26,160	21,200	12,699	112	62	26
Tuscola	35	32	38	13,715	4,386	291	13,707	4,382	291	8	4	....
Van Buren	15	23	23	28,835	15,224	5,800	28,184	14,901	5,786	651	323	14
Washtenaw	4	4	3	41,440	35,686	28,567	40,290	35,049	28,336	1,150	637	231
Wayne	1	1	1	119,068	75,547	42,756	116,395	73,872	42,032	2,673	1,675	724
Wexford [1, 12]	65	...	...	650	.....	.....	647	.....	.....	3	.....	....
Unorganized Counties in 1870:												
Clare [4, 10]	68	[c]	...	366	.....	.....	366	.....	.....	.....	.....	....
Kalkaska [1, 3, 6]	67	[c]	...	424	.....	.....	423	.....	.....	1	.....	....
Lake [13, 14]	66	[c]	...	548	.....	.....	548	.....	.....	.....	.....	....
Missaukee [1, 12]	70	[c]	...	130	.....	.....	130	.....	.....	.....	.....	....
Ogemaw [1, 16]	72	...	...	12	.....	.....	12	.....	.....	.....	.....	....
Oscoda [1, 2, 13]	71	...	...	70	.....	.....	70	.....	.....	.....	.....	....
Presque Isle [1]	69	61	...	355	26	.....	354	26	.....	1	.....	....
Schoolcraft	63	59	43	799	78	16	787	52	16	12	26	....

[15] In 1860 Mecosta included Osceola.
[13] In 1850 Ottawa included Lake, Manistee, Osceola, and part of Muskegon.
[17] In 1850 Muskegon was included in Oceana and Ottawa.
[4] In 1850 Saginaw included Bay, Clare, Gratiot, Gladwin, and Isabella.
[1] In 1850 Mackinac included Alcona, Alpena, Antrim Charlevoix, Cheboygan, Crawford, Delta (including Menominee), Emmet, Grand Traverse, Iosco, Kalkaska, Leelanaw, (including Benzie), Manitou, Missaukee, Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon, and Wexford.
[12] In 1860 Manistee included Missaukee and Wexford.
[10] In 1860 Isabella included Clare.
[3] In 1870 Antrim included Crawford, Kalkaska, and Otsego.
[6] In 1860 Grand Traverse included Charlevoix and Kalkaska.
[14] In 1860 Mason included Lake.
[16] In 1860 Midland included Gladwin, Roscomon, and Ogemaw; and in 1870 Gladwin and Roscommon.
[2] In 1860 Alpena included Montmorency, Oscoda, Otsego; and in 1870, Montmorency.
[a] Organized in 1855.
[b] Organized in 1869.
[c] Organized in 1871.

›LE 17.—*Exhibiting, for the State and by Counties, the total Native Population, and the total Foreign Population in Michigan at the times of the several U. S. Censuses of 1850, 1860, and 1870; and distinguishing the number of each Sex, as shown by the Censuses of 1860 and 1870.*

STATE AND COUNTIES.	POPULATION.													
	NATIVE.							FOREIGN.						
	TOTAL.			MALE.		FEMALE.		TOTAL.			MALE.		FEMALE.	
	1870.	1860.	1850.	1870.	1860.	1870.	1860.	1870.	1860.	1850.	1870.	1860.	1870.	1860.
STATE	918,612	600,020	*a* 342,951	470,644	311,194	447,968	288,826	265,670	149,098	54,703	147,607	88,500	118,063	65,598
Alcona, [1]	382	106	.....	202	71	180	35	314	79	.....	191	52	123	27
Allegan	26,527	13,245	4,178	13,887	6,996	12,690	6,249	5,578	2,842	947	3,163	1,613	2,415	1,229
Alpena, [1], [2]	1,265	144	.....	750	83	515	61	1,491	146	.....	969	105	522	41
Antrim, [1], [3]	1,313	141	.....	713	77	600	64	672	38	.....	405	24	267	14
Barry	19,989	12,606	4,824	10,395	6,557	9,594	6,049	2,211	1,252	248	1,251	726	960	526
Bay, [4]	8,867	1,829	.....	4,721	1,009	4,146	820	7,033	1,335	.....	4,193	820	2,840	515
Benzie, [1], [5]	1,338	.....	.....	967	.....	871	.....	346	.....	.....	201	.....	145	.....
Berrien	30,057	19,333	10,465	15,264	10,011	14,793	9,322	5,047	3,045	952	2,799	1,752	2,248	1,293
Branch	24,519	19,771	11,947	12,305	10,147	12,214	9,624	1,708	1,210	525	943	691	765	519
Calhoun	32,370	26,561	17,975	16,272	13,803	16,098	12,758	4,201	3,003	1,187	2,278	1,634	1,923	1,369
Cass	19,681	16,722	10,588	10,081	8,734	9,600	7,988	1,415	999	324	857	597	558	402
Charlevoix, [1], [6]	1,188	.....	.....	620	.....	568	.....	536	.....	.....	321	.....	215	.....
Cheboygan, [1]	1,246	383	.....	658	206	588	176	951	135	.....	577	85	374	50
Chippewa	1,218	1,068	555	638	548	580	535	472	520	343	292	303	180	217
Clinton	20,107	12,220	4,739	10,309	6,383	9,798	5,837	2,744	1,696	363	1,504	930	1,240	766
Delta, [1], [7]	1,303	694	.....	699	411	604	283	1,138	478	.....	787	331	351	147

Eaton	23,610	15,540	6,769	12,050	8,058	11,560	7,482	1,558	936	289	899	523	654	418
Emmet, [1]	1,162	1,096	.....	598	582	564	514	49	53	.....	81	22	18	31
Genesee	28,510	19,693	11,034	14,520	10,141	13,990	9,552	5,385	2,805	997	2,929	1,582	2,456	1,273
Grand Traverse, [1], [6]	3,322	915	.....	1,742	520	1,580	395	1,121	371	.....	647	259	474	112
Gratiot, [4]	10,680	8,677	.....	5,545	1,950	5,085	1,727	1,178	365	.....	644	202	534	168
Hillsdale	29,495	23,949	14,861	14,885	12,369	14,610	11,580	2,193	1,726	1,298	1,219	972	974	754
Houghton, [8]	6,013	3,042	206	3,106	1,698	2,907	1,344	7,869	6,192	502	4,689	4,602	3,230	1,590
Huron	4,270	1,295	138	2,279	758	1,991	542	4,778	1,870	72	2,757	1,107	2,021	768
Ingham	22,678	15,563	8,123	11,699	8,174	10,979	7,389	2,590	1,872	508	1,397	1,071	1,198	801
Ionia	24,195	14,651	6,847	12,529	7,600	11,666	7,051	3,480	2,031	750	1,923	1,102	1,557	929
Iosco, [1], [9]	1,744	128	.....	963	82	781	46	1,419	47	.....	941	30	478	17
Isabella, [4], [10]	3,559	1,377	.....	1,879	732	1,680	645	554	66	.....	332	35	222	31
Jackson	31,130	23,788	18,329	16,233	12,541	14,897	11,247	4,910	2,883	1,102	2,823	1,667	2,087	1,216
Kalamazoo	27,424	21,272	12,154	14,007	11,073	13,417	10,199	4,641	3,374	1,025	2,515	1,859	2,126	1,515
Kent, [11]	38,444	24,196	9,713	19,618	12,589	18,826	11,607	11,966	6,520	2,303	6,548	3,497	5,418	3,023
Keweenaw, [8]	2,061	.....	.....	1,045	.....	1,016	.....	2,145	.....	.....	1,282	.....	863	.....
Lapeer	15,857	11,675	6,461	8,068	6,171	7,789	5,504	5,485	3,079	568	2,983	1,633	2,502	1,446
Leelanaw, [1], [5]	3,045	1,609	.....	1,585	866	1,460	743	1,582	549	.....	816	322	716	227
Lenawee	39,871	33,780	24,493	19,887	17,288	19,984	16,492	5,730	4,332	1,879	3,029	2,367	2,701	1,965
Livingston	16,899	14,813	12,096	8,705	7,726	8,194	7,087	2,436	2,038	1,389	1,367	1,155	1,069	888
Mackinac, [1]	1,351	1,444	2,399	696	738	685	706	334	494	1,199	209	300	125	194
Macomb	20,333	17,358	13,472	10,275	8,838	10,058	8,520	7,286	5,485	2,058	3,821	2,932	3,465	2,558
Manistee, [12], [13]	3,407	449	.....	1,837	251	1,570	198	2,667	526	.....	1,621	363	1,046	163

a Including 1,295 unknown nativity.

[1] In 1850 Mackinac included Alcona, Alpena, Antrim, Charlevoix, Cheboygan, Crawford, Delta (including Menominee), Emmet, Grand Traverse, Iosco, Kalkaska, Leelanaw (including Benzie), Manitou, Missaukee, Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon, and Wexford.

[2] In 1860 Alpena included Montmorency, Oscoda, and Otsego: and in 1870 Montmorency.

[3] In 1870 Antrim included Crawford, Kalkaska, and Otsego.

[4] In 1850 Saginaw included Bay, Clare, Gladwin, Gratiot, and Isabella.

[5] In 1860 Leelanaw included Benzie.

[6] In 1860 Grand Traverse included Charlevoix and Kalkaska.

[7] In 1860 Delta included Menominee.

[8] In 1850 and 1860 Houghton included Keweenaw.

[9] In 1860 Iosco included Crawford.

[10] In 1860 Isabella included Clare.

[11] In 1850 Kent included Mecosta.

[12] In 1860 Manistee included Missaukee and Wexford.

[13] In 1850 Ottawa included Lake, Manistee, Osceola, and part of Muskegon.

TABLE 17.—CONTINUED.

COUNTIES.	POPULATION.													
	NATIVE.							FOREIGN						
	TOTAL.			MALE.		FEMALE.		TOTAL.			MALE.		FEMALE.	
	1870.	1860.	1850.	1870.	1860.	1870.	1860.	1870.	1860.	1850.	1870.	1860.	1870.	1860.
Manitou, [1]	478	602	.....	248	310	230	292	413	440	.....	240	268	173	172
Marquette	6,111	1,417	99	3,245	821	2,866	596	8,167	1,404	37	5,240	961	2,927	443
Mason, [14]	2,352	688	62	1,254	345	1,098	298	914	193	31	560	145	354	48
Mecosta, [11, 15]	4,205	725	.....	2,251	404	1,954	321	1,440	245	.....	810	149	630	96
Menominee, [1, 7]	1,021	.....	.....	580	.....	441	.....	874	.....	.....	686	.....	188	.....
Midland, [16]	2,456	671	65	1,332	356	1,124	315	827	130	.....	481	69	346	61
Monroe	22,686	17,419	12,270	11,432	8,922	11,254	8,497	4,789	4,174	2,428	2,518	2,209	2,271	1,965
Montcalm	11,748	3,575	887	6,243	1,867	5,505	1,708	1,893	393	54	1,041	225	852	168
Muskegon, [13, 17]	9,444	2,591	.....	5,067	1,472	4,377	1,119	5,448	1,356	.....	3,335	881	2,113	475
Newaygo	6,298	2,181	394	3,330	1,226	2,968	955	994	579	116	580	333	414	246
Oakland	34,810	32,402	28,293	17,758	16,552	17,057	15,850	6,096	5,859	2,977	3,382	3,268	2,714	2,591
Oceana, [17]	6,082	1,877	185	3,337	749	2,745	628	1,140	439	115	611	295	529	144
Ontonagon	1,712	1,512	141	831	820	881	692	1,134	3,056	248	599	2,201	535	855
Osceola [15]	1,442	21	.....	776	13	666	8	662	6	.....	391	5	271	1
Ottawa, [13, 17]	17,477	8,512	2,950	9,025	4,496	8,452	4,016	9,173	4,703	2,637	5,025	2,660	4,148	2,043
Saginaw, [4]	24,385	8,642	2,202	12,678	4,549	11,707	4,093	14,713	4,051	407	8,386	2,276	6,327	1,775
Sanilac	6,969	3,137	1,103	3,639	1,701	3,330	1,436	7,596	4,462	1,009	4,088	2,510	3,513	1,952
Shiawassee	17,984	11,077	4,928	9,261	5,661	8,723	5,416	2,838	1,272	302	1,554	698	1,284	574
St. Clair	21,856	14,964	7,162	11,139	7,807	10,717	7,157	14,903	11,640	3,258	7,872	6,234	7,031	5,406
St. Joseph	23,645	19,362	12,000	11,981	10,030	11,664	9,332	2,627	1,900	725	1,499	1,088	1,128	812

Tuscola	10,281	3,971	268	5,377	2,137	4,904	1,884	3,434	915	28	1,886	491	1,548	424
Van Buren	26,309	14,049	5,589	13,507	7,343	12,802	6,706	2,526	1,175	261	1,400	669	1,126	506
Washtenaw	32,814	28,692	23,834	16,743	14,587	16,071	14,105	8,626	6,994	4,733	4,735	3,832	3,891	3,162
Wayne	73,166	46,249	28,249	36,303	23,206	36,863	23,043	45,902	29,298	14,507	23,661	14,806	22,241	14,492
Wexford, [1], [12]	588	.....	.....	312	.....	276	.....	62	.....	.....	32	.....	30	.....
UNORGANIZED COUNTIES—														
Clare, [4], [10]	253	.....	.....	186	.....	67	.....	113	.....	.....	99	.....	14	.....
Kalkaska, [1], [3], [6]	236	.....	.....	124	.....	112	.....	188	.....	.....	120	.....	68	.....
Lake, [13], [14]	412	.....	.....	232	.....	180	.....	136	.....	.....	73	.....	63	.....
Missaukee, [1], [12]	33	.....	.....	22	.....	11	.....	97	.....	.....	54	.....	43	.....
Ogemaw, [1], [16]	2	.....	.....	.....	.....	2	.....	10	.....	.....	9	.....	1	.....
Oscoda, [1], [2], [13]	33	.....	.....	19	.....	14	.....	37	.....	.....	29	.....	8	.....
Presque Isle, [1]	96	16	.....	56	9	40	7	259	10	.....	173	7	86	3
Schoolcraft	318	71	14	179	35	139	36	481	7	2	340	5	141	2

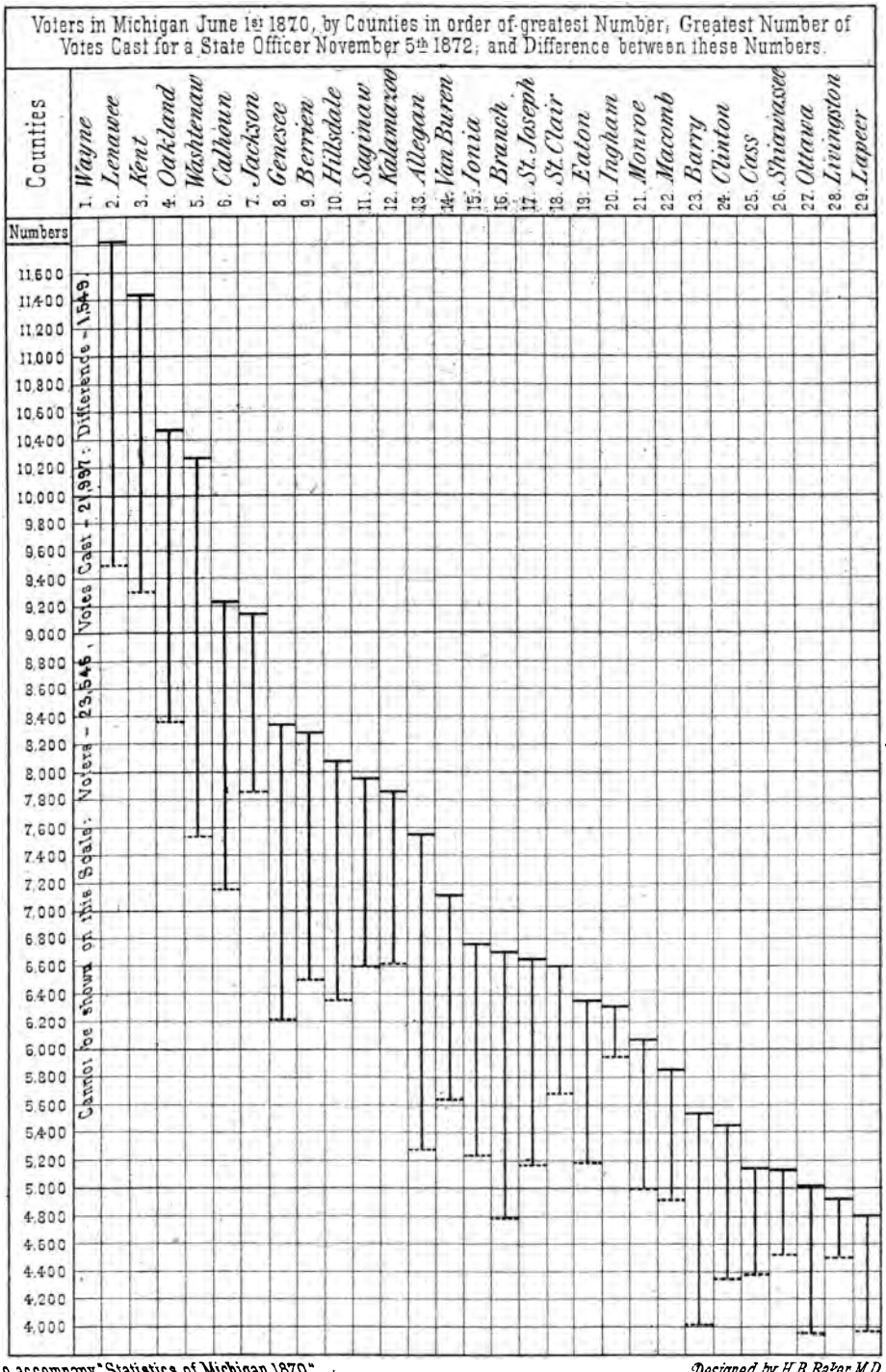
[1] In 1850 Mackinac included Alcona, Alpena, Antrim, Charlevoix, Cheboygan, Crawford, Delta (including Menominee), Emmet, Grand Traverse, Iosco, Kalkaska, Leelanaw (including Benzie), Manitou, Missaukee, Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon and Wexford.
[14] In 1860 Mason included Lake.
[11] In 1850 Kent included Mecosta.
[15] In 1860 Mecosta included Osceola.
[7] In 1860 Delta included Menominee.
[16] In 1860 Midland included Gladwin, Ogemaw, and Roscommon; and in 1870 Gladwin and Roscommon.
[3] In 1870 Antrim included Crawford, Kalkaska and Otsego.
[17] In 1850 Muskegon was included in Oceana and Ottawa.
[13] In 1850 Ottawa included Lake, Manistee, Osceola, and part of Muskegon.
[4] In 1850 Saginaw included Bay, Clare, Gladwin, Gratiot and Isabella.
[12] In 1860 Manistee included Missaukee and Wexford.
[10] In 1860 Isabella included Clare.
[6] In 1860 Grand Traverse included Charlevoix and Kalkaska.
[2] In 1860 Alpena included Montmorency, Oscoda and Otsego; and in 1870 Montmorency.

TABLE 18.—*Exhibiting, for the State and by Counties, Arranged in Order by Number of Voters, from the greatest to the least, the Number of Voters in Michigan June 1st, 1870; the Number of Votes cast November 5th, 1872, for the State Officer who received the greatest Number of Votes in the State; the excess of Voters over Votes cast; of Votes cast over Voters; and the per cent. of Votes cast to Number of Voters June 1st, 1870.*

Order.	State and Counties.	Number of Voters June 1st, 1870.	Number of Votes Cast November 5th, 1872, for Auditor General.	Excess		Per cent. of votes cast in 1872 to number of voters June 1, 1870.
				Of Voters in 1870 over votes cast in 1872.	Of votes cast in 1872 over voters June 1st, 1870.	
	State *a*	266,793	223,121	46,317	2,645	83.6
1	Wayne	23,546	21,997	1,549	.....	93.4
2	Lenawee	11,810	9,497	2,313	.....	80.4
3	Kent	11,430	9,266	2,164	.....	81.0
4	Oakland	10,441	8,371	2,070	.....	80.1
5	Washtenaw	10,260	7,548	2,712	.....	73.5
6	Calhoun	9,221	7,163	2,058	.....	77.6
7	Jackson	9,171	7,853	1,318	.....	85.6
8	Genesee	8,376	6,204	2,172	.....	74.0
9	Berrien	8,295	6,502	1,793	.....	78.3
10	Hillsdale	8,071	6,350	1,721	.....	78.6
11	Saginaw	7,979	6,603	1,376	.....	82.7
12	Kalamazoo	7,876	6,612	1,264	.....	83.9
13	Allegan	7,576	5,284	2,292	.....	69.7
14	Van Buren	7,108	5,623	1,485	.....	79.1
15	Ionia	6,789	5,237	1,552	.....	77.1
16	Branch	6,707	4,794	1,913	.....	71.4
17	St. Joseph	6,676	5,185	1,491	.....	77.6
18	St. Clair	6,604	5,691	913	.....	86.1
19	Eaton	6,353	5,197	1,156	.....	81.8
20	Ingham	6,324	5,932	392	.....	93.8
21	Monroe	6,073	4,999	1,074	.....	82.3

a Excluding counties of Houghton and Keweenaw. The total number of voters in the State may be found by adding to the statement in the first column the figures in parenthesis opposite the two counties above mentioned.

DIAGRAM Nº 5.



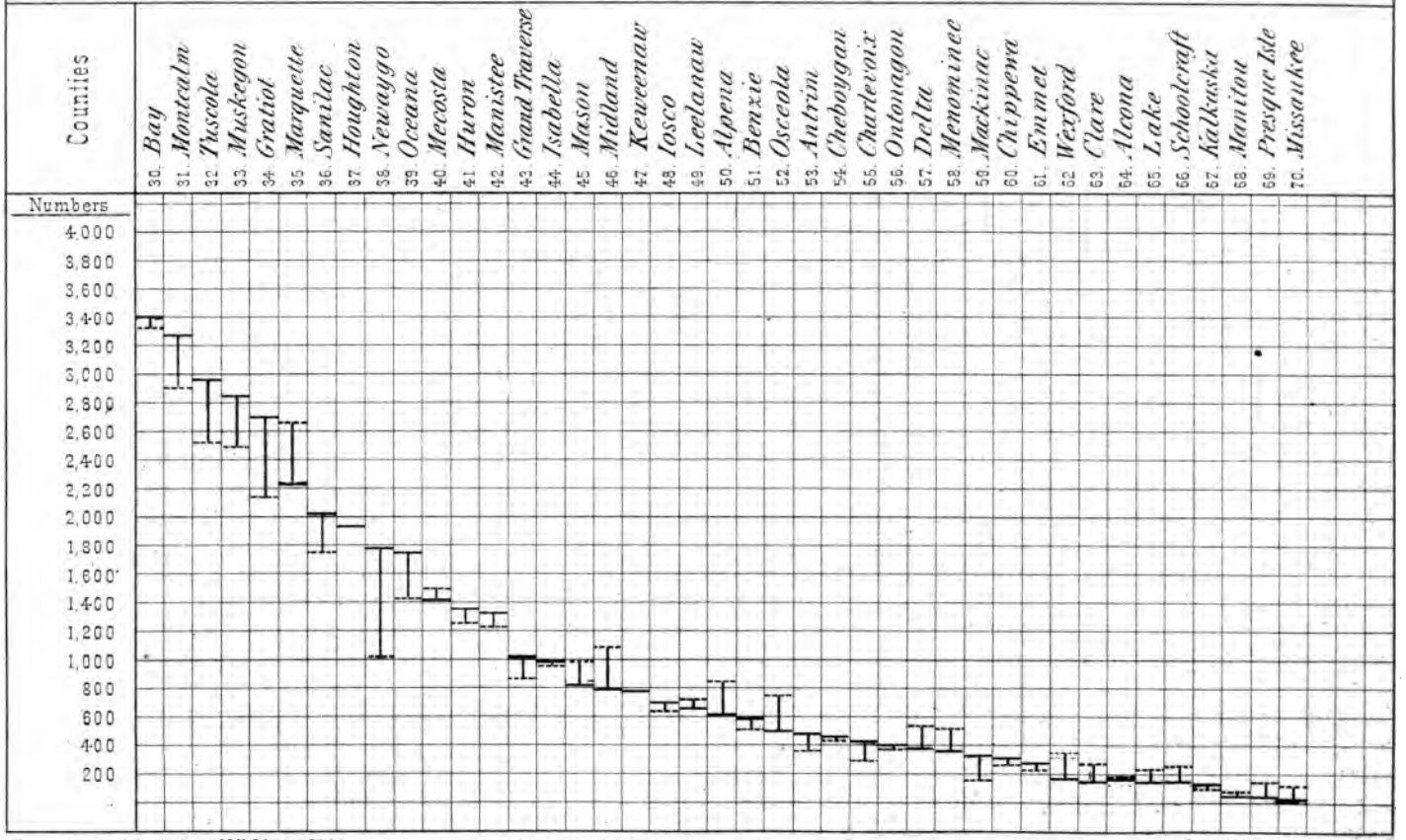
"To accompany "Statistics of Michigan 1870".

Designed by H.B.Baker, M.D.

Engraved B.N. & Engraving Co. Chicago.

Explanations
- —Voters June 1st 1870.
- |Difference between Voters in 1870, and Votes Cast in 1872.
- ---Votes Cast November 5th 1872.

DIAGRAM Nº 5. — Continued.



"To accompany "Statistics of Michigan 1870."

Western B.N.& Engraving Co. Chicago.

Explanations { — Voters June 1st 1870.
Difference between Voters in 1870, and Votes Cast in 1872.
---Votes Cast November 5th 1872.

Designed by H.B. Baker, M.D.

TABLE 18.—CONTINUED.

Order.	Counties.	Number of Voters June 1st, 1870.	Number of Votes Cast November 5th, 1872, for Auditor General.	Excess. Of Voters in 1870 over votes cast in 1872.	Excess. Of votes Cast in 1872 over voters June 1st, 1870.	Per cent. of votes cast in 1872 to number of voters June 1, 1870.
22..	Macomb	5,865	4,909	956	.....	83.6
23..	Barry	5,542	4,007	1,535	.....	72.3
24..	Clinton	5,466	4,378	1,088	.....	80.0
25..	Cass	5,149	4,398	751	.....	85.4
26..	Shiawassee	5,147	4,519	628	.....	87.7
27..	Ottawa	5,016	3,958	1,058	.....	78.9
28..	Livingston	4,937	4,501	436	.....	91.1
29..	Lapeer	4,807	3,960	847	.....	82.3
30..	Bay	3,401	3,341	60	.....	98.2
31..	Montcalm	3,256	2,887	369	.....	88.6
32..	Tuscola	2,977	2,535	442	.....	85.1
33..	Muskegon	2,844	2,493	351	.....	87.6
34..	Gratiot	2,704	2,152	552	.....	79.5
35..	Marquette	2,225	2,654	.....	429	119.3
36..	Sanilac	2,028	1,773	255	.....	87.4
37..	Houghton	(1,943)	Not returned.	.....	.....	.....
38..	Newaygo	1,786	1,008	778	.....	56.4
39..	Oceana	1,749	1,417	332	.....	81.0
40..	Mecosta	1,416	1,465	.....	49	103.4
41..	Huron	1,335	1,255	80	.....	94.0
42..	Manistee	1,326	1,236	90	.....	93.2
43..	Grand Traverse	1,013	864	149	.....	85.2
44..	Isabella	996	994	2	.....	99.7
45..	Mason	819	996	.....	177	121.6
46..	Midland	797	1,066	.....	269	133.7
47..	Keweenaw	(795)	Not returned.	.....	.....	.....
48..	Iosco and Ogemaw	679	615	64	.....	90.5
49..	Leelanaw	629	697	.....	68	110.8
50..	Alpena	609	825	.....	216	135.4
51..	Benzie	598	520	78	.....	86.9
52..	Osceola	504	759	.....	255	150.5
53..	Antrim	481	356	125	.....	74.0
54..	Cheboygan	431	423	8	.....	98.1
55..	Charlevoix	420	279	141	.....	66.4

TABLE 18.—CONTINUED.

ORDER.	COUNTIES.	Number of Voters June 1st, 1870.	Number of Votes Cast November 5th, 1872, for Auditor General.	EXCESS.		Per cent. of votes cast in 1872 to number of voters June 1st, 1870.
				Of Voters in 1870 over votes cast in 1872.	Of votes Cast in 1872 over voters June 1st, 1870.	
56..	Ontonagon	417	389	28	.....	93.2
57..	Delta	392	561	.....	169	143.1
58..	Menominee	372	559	.....	187	150.2
59..	Mackinac	357	177	180	.....	49.5
60..	Chippewa	303	227	76	.....	74.9
61..	Emmet	259	203	56	.....	78.3
62..	Wexford	187	354	.....	167	189.3
63..	Clare	165	330	.....	165	200.0
64..	Alcona and Oscoda	159	191	.....	32	120.1
65..	Lake	145	216	.....	101	169.6
66..	Schoolcraft	145	293	.....	148	202.0
67..	Kalkaska	127	103	24	.....	81.1
68..	Manitou	49	75	.....	26	153.0
69..	Presque Isle	40	147	.....	107	367.5
70..	Missaukee	38	118	.....	80	310.5

POLITICAL STATISTICS.

Table 18 and Diagram No. 5 appear to need no special explanation other than that contained in their headings and foot-notes, except to state that the number of voters is taken from Table III., page 158, and the number of votes cast from the official canvass. A large per cent of votes cast in 1872 to voters in 1870, may indicate either an increase of population,—as is especially the case in the new and small counties,—more than ordinary interest in the result of the election, or the union of both these causes. It is also possible that in some few cases it may be due to other causes. Ingham County is rather noticeable among the older counties for the large proportion of votes cast compared with the number of voters in 1870. This is shown most prominently in Diagram No. 5. It was doubtless due in part to growth in population, but also to the fact of its containing the Capital city and political center of the State, which tended to keep up a warmer political interest and to result in a more full vote than occurred in other localities.

Table III., page 158, being a new grouping of statistics, seems to call for a few words by way of introduction, and also in the way of summary. The object of such grouping is mainly to obtain some facts which it is hoped will

enable the people to reason and talk more intelligently, than would be possible without them, upon the three questions, of property, educational, and sexual qualifications of voters; and to compare the qualifications of voters with those of the non-voting classes, more especially with the property and educational condition of females aged twenty-one years and over. If these questions are, during the next ten years, to come prominently before the people, demanding their decision respecting the right or policy of a change of requirements of voters, some such grouping of facts seems very desirable, as otherwise the discussion would in some respects be carried on without any intelligent basis, and the decision possibly be different in consequence.

For greater convenience, the following note to Table III. is repeated here:

NOTE.—For the purposes of Table III., the statements concerning property owners are compiled from columns 8 and 9, Schedule I., Ninth Census. It will be seen from the following quotation from the instructions to Assistant Marshals, that every person owning real estate, even if mortgaged to its full value, should, according to instructions, appear as a property owner, as also any person owning personal property, exclusive of wearing apparel, to the amount of one hundred dollars or over. "Column 8 will contain the value of all real estate owned by the person enumerated, without any deduction on account of mortgage or other incumbrance, whether within or without the census subdivision or the country. The value meant is the full market value, known or estimated." "'Personal Estate,' column 9, is to be inclusive of all bonds, stocks, mortgages, notes, live stock, plate, jewels, or furniture; but exclusive of wearing apparel. No report will be made when the personal property is under one hundred dollars."

These are called political statistics, not but that all statistics are political, or furnish knowledge upon which it is policy to act, but for the reason that they relate to subjects heretofore recognized as closely connected with political action. Many subjects which in the past have occupied the minds of politicians appear insignificant compared with others which are just beginning to attract attention; compared for instance with the search for and removal of certain causes of excessive mortality, and the protection of the lives and health of the individuals who collectively constitute the State, from sources of danger which as individuals they are powerless to avoid. It seems evident that the highest function of government is to secure to each individual citizen the longest limit and the largest measure of life possible; and it is gratifying to know that this subject is receiving an increasing degree of attention. But among the subjects more usually recognized as proper for political action, illiteracy has important relations to public policy, whether we regard it as affecting governmental, moral, or physical health. The germs of governmental disintegration, and of moral and physical sickness and death, find a congenial soil among the ignorant and improvident where they multiply, and from whence spread destruction and unhappiness among the people of all classes.

In a republic governed by the people, ignorance among the people is a particularly serious evil. In this country, it seems eminently proper to inquire into the qualifications of our rulers.

The following propositions have been worked out from Table III., page 158:

The total number of voters exceeds the total number of resident property owners of both sexes by 48,072.

In every 3.25 voters, there is one voter who is not a property owner, or 30.72 per cent.

In every 1.06 females aged twenty-one years and over, there is one without property, or 93.96 per cent.

To every 16.37 voters there is one female property owner aged twenty-one years and over, or 6.10 per cent.

To every 11.34 property-owning voters there is one female property owner aged twenty-one years and over, or 8.81 per cent.

In every 28.99 voters there is one who cannot read, or 3.44 per cent.

In every 21.93 voters there is one who cannot write, or 4.55 per cent.

In every 21.79 males aged twenty-one years and over there is one who cannot read, or 4.58 per cent.

In every 17.16 males aged twenty-one years and over there is one who cannot write, or 5.82 per cent.

In every 20.47 females aged twenty-one years and over there is one who cannot read, or 4.88 per cent.

In every 14.30 females aged twenty-one years and over there is one who cannot write, or 6.98 per cent.

In every 32.6 voters owning property, there is one voter owning property who cannot read, or 3.06 per cent.

In every 24.4 voters owning property, there is one voter owning property who cannot write, or 4.09 per cent.

In every 28.81 females aged twenty-one and over owning property, there is one who cannot read, or 3.47 per cent.

In every 19.75 females aged twenty-one and over owning property, there is one who cannot write, or 5.06 per cent.

In every 23.18 voters without property there is one who cannot read, or 4.31 per cent.

In every 17.86 voters without property there is one who cannot write, or 5.59 per cent.

In every 20.09 females aged twenty-one and over without property, there is one who cannot read, or 4.97 per cent.

In every 14.06 females aged twenty-one and over without property, there is one who cannot write, or 7.11 per cent.

In every 75.47 voters there is one who is without property and cannot read, or 1.32 per cent.

In every 58.15 voters there is one who is without property and cannot write, or 1.68 per cent.

It is not claimed that these statistics are anything more than very distant approximations to the number of female property owners. The peculiar customs of the people concerning the title and ownership of property should be kept in mind. Real estate is almost uniformly considered as belonging to the head of the family, although a perfect title requires the signature of the wife. Without doubt the number of female property owners would have been very much larger if the real value of the interest of wives in the property of the family had been considered by the Assistant Marshals in making the returns.

For further or more specific information, the reader is referred to Table III., page 158.

PART II.—BIRTHS, MARRIAGES, AND DEATHS.

BIRTHS.

The general reader who simply wishes to see the whole number of births during the census year, or the relative number in each month, may turn immediately to Table 5, the last line of which exhibits the nearest approach to the true numbers which could be made from the material at hand. This line is also exhibited by the uppermost dashed line in Diagram No. 6, from which may also be seen the relation which this line of births, as corrected, bears to the lines representing the births as returned by the census and by registration officers, and to the births by the census after certain corrections. If the reader prefers to examine the births as returned they are exhibited in the same table and diagram. Statisticians and others interested, who know how much the accuracy of these results depends upon the skill with which imperfectly collected material is corrected and grouped, and who wish to examine critically the methods employed, can do so by studying the following remarks and tables in which it is believed will be found the necessary details, although it has been found difficult to include all the evidence which has influenced the compiler in making the several corrections.

The discrepancies between the statements of the births by months in Michigan by the census marshals and by the registration officers appear to be numerous and remarkable. See pages 212 and 228. A careful comparison of tables and diagrams, constructed from material derived from each source, renders it probable that *no true idea of the relative number in each month, or even of the whole number, during the year, can be obtained from either source alone as at present enumerated.* By combining the evidences obtained from both sources, the resulting statements appear quite probable, especially when the births as returned by registration officers are corrected by means of the census. These being facts in the case, it has been thought desirable to gather from the Registration Reports and returns such material as it seems essential should be combined with these statistics and exhibited in this connection in order to contribute to the better understanding of the subject.

TABLE 1.—*Exhibiting, for the State and Counties, by Months, the total Number of Births, in Families residing in Michigan June 1st, 1870, as shown by the Census; the total Number in Families residing in Counties from which no returns of Births were received for the Registration Reports; the whole Number of Births, according to the Census, in Families residing in Counties represented by Registration Returns; and the total Number of Births in the State as returned for the Registration Reports, for the year ending May 31st, 1870.*

	Year ending May 31, 1870.	MONTHS.												
		1869.							1870.					
		June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	Unknown.
Births in families residing in Michigan June 1, 1870, as per census	34,580	1,724	2,658	2,924	3,225	2,754	3,661	3,008	3,305	3,610	3,817	4,063	291	.....
Births as per census in families residing in counties from which no returns were received for Registration Reports	303	23	24	22	21	21	30	25	34	27	26	46	4	.....
Births as per census in families residing in counties represented by Registration Returns	34,227	1,701	2,629	2,902	3,204	2,733	3,631	2,978	3,271	3,583	3,291	4,017	287	.....
Births in the State as per Registration Reports	27,206	2,085	2,471	2,731	2,681	2,508	2,361	2,512	1,604	1,737	2,099	2,076	2,275	66
Difference between births in the State as per Registration returns and births in families residing in counties represented by Registration Returns as per census	7,021	-384	158	171	523	225	1,270	466	1,667	1,846	1,192	1,941	-1,988	-66

The differences between the statements of births in Tables I. and II., pages 212 and 228, may be studied a little more closely in Table 1 of Part II. in this summary. It should be noticed at once that the statements of births by months are not direct ones but are calculated from answers to inquiries by the census marshals concerning the age of children living and of children who died during the year in families residing in the State June 1st, 1870, whether the children were born in Michigan or not. On the other hand, the statements of births in the Registration Reports are compiled from answers to questions by supervisors and assessors as to children born in the particular township, city, or ward in which each supervisor or assessor resides. At least this difference applies to the instructions and laws concerning the enumeration of births by census and registration officers. It is quite probable that, in exceptional cases, this clause of the law of registration is not accurately followed. Supposing the enumeration by both methods to be in accordance with instructions, then the number by the census should exceed the number by the Registration Report because of immigration of those born outside of the State. It will be seen by Table 1 that, after making allowance for localities from which no registration returns were received, there were 7,021 more births shown by the census than by the Registration Reports for the same time.

As will be seen from Table 1 and from Diagram No. 6, the statements of the number of births returned by the census and by the registration returns during the last five months of the census year bear a different relation to each other than during the first seven months, where the difference is not so great. While there is nothing peculiar about the births shown by the census, which would explain this difference between the first and last parts of the year, we find by Table 1 that there is a falling off in the number of births returned by registration officers for the last five months of the census year. This is shown more distinctly by the lower line in Diagram No. 6. If the returns from both sources showed the same decreased proportion of births at that season of the year, we might conclude that there were really less births during those months; the census returns, however, do not show a decrease but an increase. The last five months of the census year are the first five months of the registration year *following* the one from which the first seven months of the census year are taken, and the diminished number for the last five months of the census year, it is believed, is due to the fact that they are not enumerated as soon after their occurrence as are the births for the first seven months. The births for the months of June to December, inclusive, were collected by the registration officers in May, by the census marshals, for the most part, in June, some in July, and a less number in August; the returns of these different officers agree best for

those first seven months. The births during those months were collected by both officers about the same time. The births for January and following months were enumerated by census marshals at this same time, and seem to continue on at about the same or an increased rate; but by registration officers they were not enumerated until a year from that time. Diagram No. 6 shows that the number enumerated by registration officers is much below that obtained by the census.

The difference in the time elapsing previous to the enumeration of births for December by these different officers was only a month or two, and the numbers enumerated by them correspond as closely as could be expected, considering the difference in the questions, etc. The difference in the time before the enumeration of births in January by these different officers was 16—5=11 months, and the difference between the numbers collected by them was very great. The difference in the time before the enumeration by these officers of the births in February, was 15—4=11 months, and the difference between the results by the two methods was also great. In fact, from a study of the tables and diagrams, it appears that in a general way the line representing the births as per registration returns maintains something like the same relation, to the line representing births as per Census, throughout the last five months of the census year. This seems to show that the number omitted in enumerating is about the same whether the eleven months time is additional to one, two, three, four, or five months time elapsing between the occurrence of the births and their enumeration, and that *the number omitted is in direct proportion to the time elapsing before enumeration.* In correcting the statements of births (see Table 6) and deaths as per registration returns, and of the deaths as per Census (see Table 4), this is assumed to be true. This assumption would probably not be in accordance with the truth if the time considered was very great. The addition of one month to a period of several years would not, perhaps, increase the number of omissions as much as it would if added to a few months; but, for the short time considered in this discussion, the assumption is, believed to be sufficiently near the truth for practical purposes. The assumption does not, however, rest entirely upon the evidence derived from the statistics of births alone; the evidence supporting it derived from the statistics of deaths is very much more conclusive, as will appear elsewhere.

Another fact bearing upon this question is that, viewed separately, the returns by census or registration officers both show a larger proportion of births and of deaths for the last than for the first part of the collection year, whether the year be made to end with May or with December, although as regards deaths, a large proportion is returned by both methods as having occurred in August and September.

Embracing, as it did, the time included in the last part of one and the first part of the succeeding registration year, the census has supplied a means of very materially correcting the statistics of births and deaths obtained by the system of registration; if two censuses could be taken, the last one following the first in the next succeeding year, it might and probably would demonstrate the fact that the census statistics of deaths were defective in the same direction as those of the registration returns.

That the omissions of births from the registration returns is in proportion to the time elapsing before their enumeration, appears more probable after considering certain errors in the statements of births derived from the census.

By Table 1, and particularly by Diagram No. 6, it will be seen that if the line representing the births as per census for the two months of June and May was not so much below what would be expected, considering its position for the months next to them, then the two lines representing the births as returned by the registration and by the census would sustain a more regular relation to each other, and the omissions for the last five months by registration would be more apparent and appear to be more uniform than they do now. The births as per census for June are calculated from the number aged eleven months. It is believed that the number is too small from the same cause as that, before pointed out, which rendered the statement of the number of inhabitants aged 29 and 31 so very much less than the number aged 30,—those aged 39 and 41 so much less than those aged 40, etc. See page xxviii.

It was the tendency of the people and the assistant marshals to state the age in "round numbers," approximating the true age, but not stating it exactly. This is a law of mental action which it is important that statisticians should know and continually keep in mind. It is well illustrated in Diagrams Nos. 3 and 4, not only as it applies to the important ages just mentioned, but also as it influences many minor angles along the line. Notice, for instance, the peculiar angles in the line representing either the male or the female inhabitants at the ages 33 and 34, 43 and 44, and 53 and 54. In the case of the children aged nearly a year, some of them were called one year old because it was easier than it was to call them eleven-twelfths of a year old. If this is, as it is believed to be, the true explanation of the small number of children born in June—aged eleven months at the time of the census enumeration—then it seems entirely proper to correct the statement for this month by means of the registration returns. This is done in Table 4, and in Diagram No. 6 the continuous line representing the births as per census "corrected and equalized," is higher up for the month of June in consequence of such correction.

The most noticeable error in the statements of births by the census is in the

number for May, which is the number aged under one month at the time of the census enumeration. At least a few of the Assistant Marshals received, in some way, an impression that they were not to enumerate any children who were less than one month old, whereas they should have enumerated all children born before the first of June, 1870. Doubtless a part of the error for May was due to omissions because of this wrong impression, but the error was mainly in consequence of the prolonged method of the census enumeration, as will be shown by Table 3 and the remarks following.

TABLE 2.—*Exhibiting the manner of obtaining the Number of Births in Michigan, by Months, during the Census year ending June 1st, 1870, as shown by the population aged under one year at the close of the year, increased by the Number born who died during the year.*

Census year	1869.							1870.					Total. for the year.
Months of birth as shown by age	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	
Ages June 1st, 1870, in 12ths of a year	11-12	10-12	9-12	8-12	7-12	6-12	5-12	4-12	3-12	2-12	1-12	0-12	
Population June 1st, 1870, aged under one year	1,511	2,415	2,732	3,044	2,650	3,520	2,881	3,164	3,467	3,208	3,967	248	32,802
Born and died during the census year *a*	213	238	192	181	104	141	122	141	143	114	96	43	1,728
Births during census year as shown by above	1,724	2,653	2,924	3,225	2,754	3,661	3,003	3,305	3,610	3,317	4,063	291	34,530

TABLE 3.—*Exhibiting how some of the Births are made to appear to have occurred in Months previous to those in which they did occur,—an error occasioned by a wrong statement of the age in consequence of the enumeration having been delayed until July and August.*

Census year	1869.							1870.					When Enumerated.
Ages in twelfths of a year	11-12	10-12	9-12	8-12	7-12	6-12	5-12	4-12	3-12	2-12	1-12	0-12	
Apparent months of birth calculated from the age, June 1st	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June 1
Months of birth if enumerated July 1st, and age at that time stated	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	.....	July 1
Months of birth, if enumerated August 1st, and age August 1st stated	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	.....	.....	Aug. 1

a See Table 12—of deaths of those aged under one year, separated into those born in census year and in previous year.

The month of birth having been calculated from the statement of the age, in months, June 1st, 1870, as shown by Table 2 and in the first two lines of Table 3, and the age at time of enumeration having been sometimes given, the apparent months of birth were pushed to the left, as illustrated in the last two lines of Table 3, compared with the first line where the months of birth are correctly shown, if the age as it was, June 1st, 1870, was stated. If the enumeration was made June 1st, a child less than one month old at that time was born in May; if the enumeration was made July 1st, and the age at time of enumeration was found to be less than one month, then the child was born in June after the close of the census year, and consequently was not enumerated. If the age was one month, the child was born in May; but in calculating the month of birth from the statement of the age, we count the age as it was June 1st as having been stated, and consequently if the age at time of enumeration be given, such children, although born in May, appear in our tables as having been born in April, as shown on the first line. If the enumeration was made August 1st, and the age at time of enumeration stated as less than two months, the child was born after the close of the census year, and was not enumerated. If two months old, the child was born in May; but if the age at time of enumeration be stated, and the month of birth be calculated as if the child was two months old June 1st, the birth would appear to have occurred in March, as shown on the first line.

Regardless of the time of enumeration, if the age June 1st was stated in accordance with instructions, and found to be less than one month, the child was born in May; if found to be one month, the child was born in April, etc.

The facts are that most of the Assistant Marshals made the greatest number of their enumerations in July, hence the cause of the large increase of number apparently born in April over the number in May; or, the increase of the number aged one month over the number less than one month old. A few enumerations were made in August, hence the number apparently born in March exceeds the number in May, but falls short of the number in April; or, the number aged two months exceeds the number less than one month old, but falls short of the number aged one month. Thus many of the births were pushed back so as to appear to have occurred as many months previous to the actual time of birth as there was delay in the enumeration,—an error which would have been almost entirely avoided had all the enumerations been made in June.

As it was, only about one out of ten of those born in May, and quite a small proportion of the inhabitants of the State under one year of age, was enumerated exactly in accordance with the instructions to Census Marshals; the ages

of the other nine-tenths of those born in May were returned from one to five months too great; a large proportion of those aged under one year was returned only one month too old.

The same remarks apply, in a measure, to persons at all ages. The age at last birthday was or should have been stated, and in some of the cases in which a birthday had passed between June 1st and the time of enumeration, a year was added to the statement of the age of those aged over one year.

If it had been known that the statement of the population by age was so erroneous, the error, so far as it applies to births, might have been at least partially obviated by making the compilation from column 13—"Month of birth"—instead of from column 4—"Age in twelfths of a year;" but it is not at all certain that on the whole the result would have been much better; and this method reveals a fact important to be considered in connection with any use which it may be desired to make of the number living at any age in months under one year, as stated in the U. S. Census. These numbers are now shown to be displaced, and erroneous unless corrected in some manner to remedy this displacement.

In connection with the subject of births it may be well to suggest a probable cause of the peculiar appearance of the lines in Diagrams 3 and 4, representing the males and females at the ages under ten years. Inhabitants ten years old at last birthday June 1st, 1870, were born during the year ending June 1st, 1860. Those five years old in 1870 were born in 1864–5. It will be seen that at the ages from five to ten the lines are exceptionally low, especially so at the age of five, considering the tendency to unusual numbers at such an easily spoken age. It seems quite probable that the small numbers aged five to ten were due to the decrease of births during the war of 1861–5. And the great number of males aged two and of females aged three years resulted from the unusual number of births following the return of the soldiers at the close of the war. The females aged three were born during the years 1866–1867, the males aged two years in 1867–1868.

It has been suggested that the explanation given, on a preceding page, of the small number of births shown by the census for June, or the small number of inhabitants aged eleven months, being that they were enumerated as one year old, could not be true for the reason that the number of persons aged one year was also small compared with the numbers aged two and three years. If the explanation just given of the increased numbers aged two and three years is correct, then the objection made is not a valid one, for an unusual number of births would almost certainly be followed by a less than usual number, for the reason that many mothers nurse their children for one year or more, during which period the occurence of pregnancy is improbable.

TABLE 4.—*Exhibiting, by Months, the Number of Children Born in Michigan during the year ending June 1, 1870, who died before the close of the Year, as Computed from returns on Schedule 2, Census 1870, and the Per cent. and Number of these to be added to the Number of Births as a correction for time elapsing before Enumeration; the Number of Births during the Year as obtained from Schedule 2; the Number of Births as thus corrected; a correction, by calculation, for June, 1869, and April and May, 1870, for wrong statement in Schedule of the age of Children living at the close of Census year; the calculated Number of Births thus corrected; also, the Number of Births equalized to a supposed constant Population equaling the Population at the close of the year; and the Number of Births, thus estimated, equalized to Months of uniform length of 30.44 days.*

	Total.	1869.							1870.				
		June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.
Children whose births and deaths occurred during the census year	1,728	218	238	192	181	104	141	122	141	143	114	96	43
Per cent. of such dead children to be added to number of births previously obtained, as a correction for omissions because of time before enumeration *a*	.....	98.09	89.92	81.75	73.58	65.41	57.24	49.07	40.90	32.73	24.56	16.39	8.22
Births and deaths of children during the year added as a correction for omissions	1,075	209	214	157	133	68	81	60	58	47	28	16	4
Number of births during the year, as shown by Table 2	34,580	1,724	2,658	2,924	3,225	2,754	3,661	3,008	3,305	3,610	3,317	4,063	291
Number of births as above corrected	35,605	1,933	2,867	3,081	3,358	2,822	3,742	3,068	3,363	3,657	3,345	4,079	295
Corrections for wrong statements of age of children living *b*	2,206	+577	.....	.....	.....	.....	.....	.....	.....	.....	.....	-1,067	+2,696
Number of births as obtained by above corrections	37,811	2,510	2,867	3,081	3,358	2,822	3,742	3,068	3,363	3,657	3,345	3,012	2,991
Per cent. of births to be added to equalize them to population at close of year *c*	.....	4.21	3.86	3.51	3.16	2.81	2.46	2.11	1.76	1.41	1.06	.71	.35
Births added to equalize them to population at close of year	844	106	111	108	106	79	92	65	59	52	35	21	10

a See pages lxx, lxxi, and lxxix. *b* See pages lxxii—lxxv, lxxix. *c* See pages lxxx, lxxxi.

TABLE 4.—CONTINUED.

	Total.	1869.							1870.				
		June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.
Births as corrected, equalized to population at close of year *a*	38,655	2,616	2,978	3,189	3,464	2,901	3,834	3,128	3,422	3,709	3,880	3,088	3,001
Days and hundredths by which the months should be increased or diminished to equalize them to uniform length	.....	+.44	-.56	-.56	+.44	-.56	+.44	-.56	-.56	+2.44	-.56	+.44	-.56
Number by which the births should be increased or diminished to equalize them to months of uniform length	+114	+88	-54	-57	+51	-52	+56	-57	-62	+322	-61	+44	-54
Births as above corrected and equalized, equalized to months of uniform length *b*	38,769	2,654	2,924	3,132	3,515	2,849	3,890	3,071	3,360	4,031	3,319	3,077	2,947

a Represented by continuous line on Diagram No. 6. *b* See page lxxxi.

The number of births was obtained from the census by adding to the number of children under one year of age, living at the close of the census year, the number whose births and deaths occurred during the year, as is shown in Table 2. Of these children who died it is presumed that there was the same per cent. of omissions in the enumeration as for other deaths. For the purposes of this correction, which is shown in Table 4, we assume that the omissions of deaths by census marshals were influenced by the time before enumeration in the same manner and to the same extent as was the enumeration of the deaths by registration officers. We therefore add to the number enumerated a certain per cent. of the deaths as an estimated correction, the per cent. being ascertained by correcting the deaths, as per registration returns, by the statements of the census, as shown elsewhere,—in connection with deaths.

In Table 4 the "corrections for wrong statements of age of children living" are made because of the very evident errors in the number compiled as having been born in June, 1869, and in April and May, 1870.

We may approximate to the correct number of births for the month of June by assuming that the ratio of births in July to the births in June by the census should equal the ratio for the same months by registration returns corrected for time elapsing between the occurrence of the birth and the time of enumeration, we may make the proportion:

Registration as above corrected.				Census.		
July.		June.		July.		June.
3,931	:	3,468	::	2,867	:	x

In which x equals 2,510, the number that should have been returned for June, or 577 more than were returned.

To correct the births for April we make the proportion:

Registration as above corrected.				Census.		
March.		April.		March.		April.
3,771	:	3,396	::	3,345	:	x

in which x equals 3,012, the number that should have been returned for April, or 1,067 less than were returned.

To correct for May we make the proportion:

Registration as above corrected.				Census.		
April.		May.		April.		May.
3,396	:	3,372	::	3,012	:	x

in which x equals 2,991, the number that should have been returned for Ma

or 2,696 more than appears for that month, after correction, for those whose births and deaths occurred within the year.

Supposing the births to be all collected, or an equal proportion of them collected in every part of the year, then, whether the proportion during the first part of the year shall appear to be the same, greater, or less than during the last part of the year will depend, not altogether upon the real birth-rate, but also upon the fact as to whether the population is stationary, decreasing, or increasing.

EXHIBIT C.—*Increase of Population of Michigan in each year from 1860 to 1870 inclusive, as Estimated by a uniform per cent. of the Population at the beginning of the year; and the Population for each year as thus estimated, with the Population as per Census of 1860 for a basis.*

YEARS FROM 1860 TO 1870 INCLUSIVE.	Estimated increase of Population during each year ending June 1, being 4.69 per cent. of the Population at beginning of the year.	Estimated Population June 1st in each year as obtained by increasing that of previous year by 4.69 per cent.
1860	.....	749,113
1861	35,133	784,246
1862	36,781	821,027
1863	38,506	859,533
1864	40,312	899,845
1865	42,203	942,048
1866	44,181	986,229
1867	46,254	1,032,483
1868	48,423	1,080,906
1869	50,694	1,131,600
1870	53,072	a 1,184,672

To equalize the births to a population equaling that existing at the close of the year, is to find the number of births that would have occurred had the population at the beginning equaled that at the close of the year, and remained stationary. The population of Michigan at the close of the year, as estimated for this purpose, was 1,184,672, and at the beginning of the year, 1,131,600. [See Exhibit C.] Assuming the increase to be the same number in every month, an average population for the year would be 1,158,136. The number

a The population in 1870 was 1,184,282; the difference between this and the number here shown is due to the fact that the per cent. of increase used is too large by a fractional part of one-hundredth of one per cent.

of births obtained by the census in this population was 37,811. To obtain the number of births for a stationary population of 1,184,672 (the population at the close of the year), we make the proportion:

$$1{,}158{,}136 : 37{,}811 :: 1{,}184{,}672 : x,$$

in which x equals 38,677, or 866 births more than were returned. This number, 866, is an average of 2.285 per cent. of the number of births already obtained, and is to be added to them as a correction. But it is evident that the first month (June, 1869) should have twelve times as great a per cent. of births added as the last month (May, 1870), and that the per cent. for every month after the first should be a twelfth of the first less than the next preceding month. Hence we obtain the line "Per cent. of births to be added to equalize them to population at close of year," the average (2.285 per cent.) falling between November and December.

The total thus obtained to be added is 844, or 22 less than the number obtained by proportion. This difference arises from the fact that the number of births to be increased was not the same in all the months, being less than the average for the first months, which were multiplied by the greatest per cent.

In order to compare the relative number of births in the different months, it is necessary first to compute the number which would have occurred in each month if it had been of a fixed length uniform with the others.

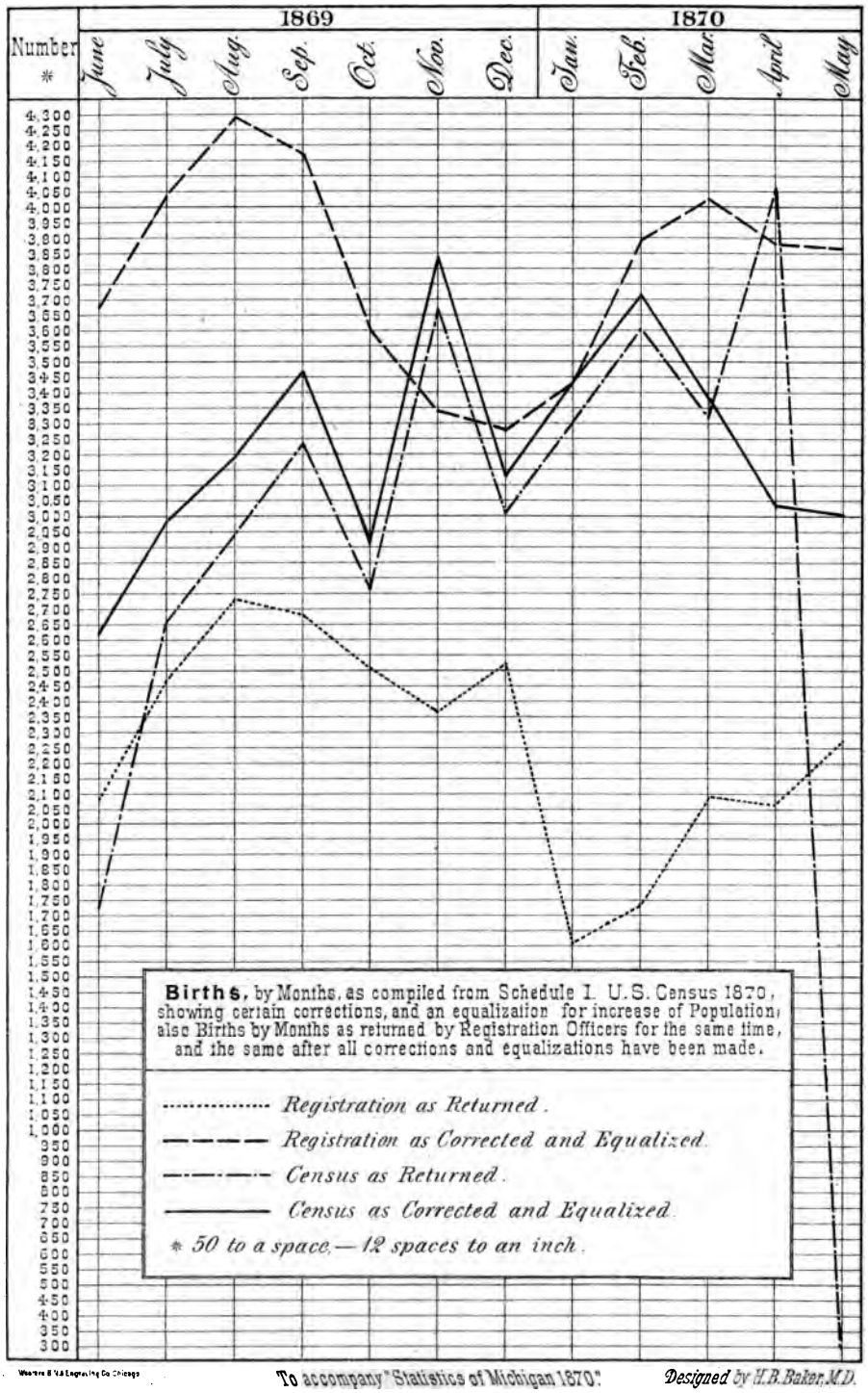
The months, equalized to uniform length, contain 30.44 days each. To equalize the births to months of uniform length, we divide the nnmber of births in each calendar month by the number of days in the month, multiply the quotient by the difference between this number of days and 30.44 days, and subtract the product from the number of births in the month when the month contains more, and add it when it contains less, than 30.44 days. This has been done in Table 4 for the births as obtained from the census; but it is very doubtful if the resulting statements by months are any nearer the truth, if indeed they are as near, for the reason that the births before this equalization are displaced out of the months in which they actually occurred, as explained in Table 3 and remarks following. The same method of equalization by months is employed in Table 6 concerning the births as per registration returns, in which case there seems to be no doubt but that it is applicable and essential.

TABLE 5.—*Exhibiting, by Months, the number of Births in Michigan during the Year ending June 1st, 1870, obtained from U. S. Census; the number thus obtained corrected,—for omissions in enumerating those whose Births and Deaths occurred within the year, and for the Months of June, 1869, and of April and May, 1870, because of wrong statement of Ages of Children living, and as thus corrected, equalized to a uniform Population, equaling that when the Census was taken at close of Year; also, the number of Births as returned by Registration Officers for the same Months; and these Births as corrected for time elapsing between their occurrence and enumeration, and, as thus corrected, equalized,—to a uniform Population equaling that at close of year, and also to Months of uniform length.*

	Total.	1869.							1870.				
		June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.
Number of births obtained from census	34,580	1,724	2,653	2,924	3,225	2,754	3,661	3,003	3,305	3,610	3,817	4,068	291
Births, as obtained from census, corrected,—1st, For omissions in enumerating those whose births and deaths occurred within the year; 2d, For the months of June, 1869, and April and May, 1870, because of wrong statement of ages of children living; and births, thus corrected, equalized to a uniform population equaling that at close of year	38,655	2,616	2,978	3,189	3,464	2,901	3,834	3,128	3,422	3,709	3,380	3,033	3,001
Births returned by registration officers	27,140	2,085	2,471	2,731	2,681	2,508	2,361	2,512	1,604	1,737	2,099	2,076	2,275
Births, returned by registration officers, corrected for time elapsing between occurrence and enumeration, and, as thus corrected, equalized,—1st, to a uniform population equaling that at close of year; 2d, to uniform months of 30.44 days each	45,462	3,667	4,040	4,282	4,160	3,601	3,343	3,278	3,429	3,898	4,023	3,877	3,864

Table 5 exhibits in tabular form what is graphically represented in Diagram No. 6, and is printed here in order that the Table and Diagram may be readily compared.

DIAGRAM Nº 6. [Scale of 600 to an inch.*]



Western B'k & Engraving Co. Chicago

To accompany "Statistics of Michigan 1870".

Designed by H.B. Baker, M.D.

TABLE 6.—*Exhibiting, by Months, the Number of Births in Michigan during the Census Year ending June 1st, 1870, as returned by Registration Officers; the Number during the last Five Months of the Year, corrected by calculation for one year longer time before enumeration than elapsed before enumeration of Births for first seven Months,—giving the Calculated Number that would have been returned had they been enumerated in May, 1870, instead of May, 1871; the Number for the first Seven Months of Census Year as returned by Registration Officers, corrected by calculation, and for the last Five Months re-corrected, giving the calculated Number of Births as if enumerated in Months of Occurrence, as is made the case with May by the first correction; also, the Number of Births, by Months, equalized to a supposed constant Population equaling the Population at the close of the year; and the Number of Births thus estimated, equalized to Months of uniform length of 30.44 days.*

	1869.							1870.					Total.
	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	
Births as returned by Registration Officers	.....	.....	.....	.....	.....	.....	.....	1,604	1,737	2,099	2,076	2,275	.....
Per cent. of Births to be added for correction for one year additional time before enumeration	.....	.....	.....	.....	.....	.....	.....	72.36	72.36	72.36	72.36	72.36	.....
Births to be added for above correction	.....	.....	.....	.....	.....	.....	.....	1,161	1,257	1,519	1,502	1,646	7,085
Births, if enumerated in May, 1870, instead of May, 1871	.....	.....	.....	.....	.....	.....	.....	2,765	2,994	3,618	3,578	3,921	.....
Births as returned by Registration Officers	2,085	2,471	2,731	2,681	2,508	2,361	2,512	.....	.....	.....	.....	.....	27,140
Per cent. of Births to be added for correction for time before enumeration	66.33	60.30	54.27	48.24	42.21	36.18	30.15	24.12	18.09	12.06	6 03	.00	.....
Number of Births to be added for correction last mentioned	1,383	1,490	1,482	1,293	1,059	854	757	667	542	436	216	00	10,179
Births corrected as if enumerated in months of occurrence	3,468	3,961	4,213	3,974	3,567	3,215	3,269	3,432	3,536	4,054	3,794	3,921	44,404

TABLE 6.—CONTINUED.

	1869.							1870.					Total.
	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	
Per cent. of Births to be added to equalize them to population at close of year	4.21	3.86	3.51	3.16	2.81	2.46	2.11	1.76	1.41	1.06	.71	.35	.....
Births to be added to equalize them to population at close of year	146	158	148	126	100	80	69	60	50	43	27	14	1,016
Births, as corrected, equalized to population at close of year	3,614	4,114	4,361	4,100	3,667	3,295	3,338	3,492	3,586	4,097	3,831	3,985	45,420
Days and hundredths by which the months should be increased or diminished to equalize them to uniform length	+.44	—.56	—.56	+.44	—.56	+.44	—.56	—.56	+.244	—.56	+.44	—.56	.....
Number by which the Births should be increased or diminished to equalize them to months of uniform length	+ 53	— 74	— 79	+ 60	— 66	+ 48	— 60	— 63	+ 312	— 74	+ 56	— 71	+42
Births, as corrected, equalized to months of uniform length	3,667	4,040	4,282	4,160	3,601	3,343	3,278	3,429	3,898	4,023	3,877	3,864	45,462

It is believed that the decreased number of births returned by the registration officers for the last five months of the census year, compared with the census, resulted from the omission of births because of one year longer time elapsing previous to their enumeration than passed before the enumeration of those for the first seven months of the census year. Omissions from the same cause occurred in the returns of births by the census only as regarded those whose births and deaths both occurred within the census year, which number was proportionally so small that for the purpose of correcting the registration returns the census returns for the months of December and January are regarded as sufficiently accurate. The ratio of births in December to the births in January by the registration returns should probably equal the ratio of births for the same months as shown by the census; we therefore make the following proportion:

Births by census.				By registration.		
Dec.		Jan.		Dec.		Jan.
3,003	:	3,305	::	2,512	:	x

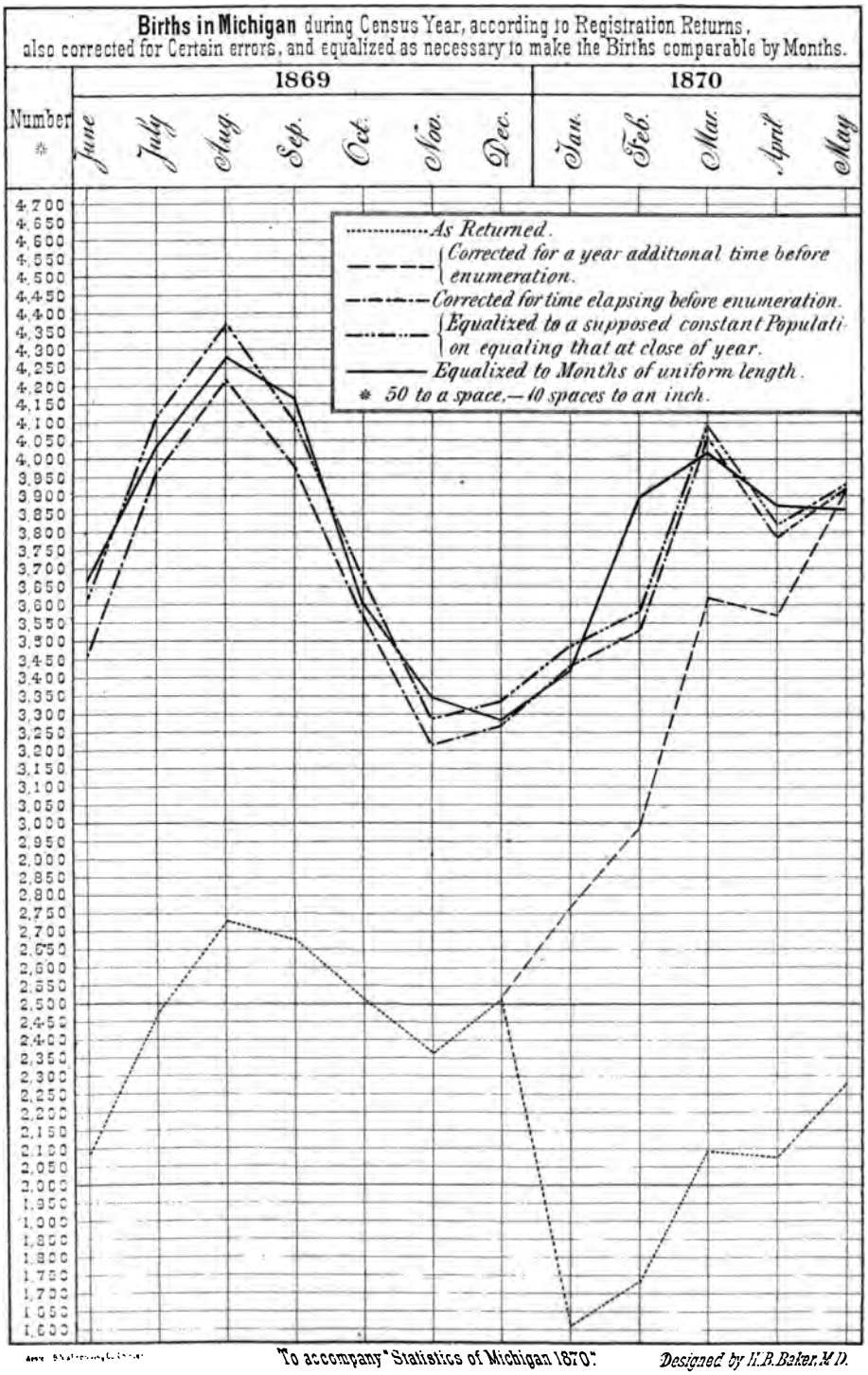
in which x equals 2,765, the number that should have been returned for January. This is 1,161, or 72.36 per cent. of the births returned for that month, more than were returned.

It appears probable then that, under these circumstances, a delay of one year before enumerating births results in omissions to such an extent that 72.36 per cent. of the number enumerated must be added to them in order to make the number equal that which it would have been if enumerated one year sooner. In Table 6 this per cent. is accordingly added to the births for the last five months of the census year. This leaves the births for all the months as if enumerated in May, which is eleven months after the occurrence of the births for June,—the first month of the census year,—ten months after those for July, nine months after those for August, etc., etc. If, as we have assumed from the evidence, the omissions are in proportion to the time before enumeration, then the births for June,—the first month of the census year,—should be increased by eleven-twelfths of 72.36 per cent.; the births for July should be increased by ten-twelfths of 72.36 per cent., etc., as is done in Table 6, in order to ascertain the number of births which would have been shown if enumerated in the months in which they occurred. In order to make the births comparable by months, they are then equalized for growth of population and for different length of months, in the manner described and for the reasons given in the remarks following Table 4 and Exhibit C, page lxxx.

ABLE 7.—*Exhibiting, by Months, and the total Number for the Census year ending June 1st, 1870, the Births as returned by Registration Officers; the Number of Births for the last five Months of the Census year, increased by an estimated Correction for omissions resulting from one year additional time elapsing before enumeration,—giving the Number as it would have been if enumerated in May, 1870, instead of May, 1871; the Number of Births for the Census year increased by an estimated correction for omissions resulting from the time elapsing before Enumeration,—giving the Number as it would have been if enumerated in Months of occurrence; the Births so corrected, Equalized to a supposed uniform Population equaling that at close of year; and the Births thus Corrected and Equalized, Equalized to Months of uniform length.*

	Total.	1869.							1870.				
		June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.
Births as returned by Registration officers	27,140	2,085	2,471	2,731	2,681	2,508	2,361	2,512	1,604	1,737	2,099	2,076	2,275
Births if enumerated in May, 1870, instead of May, 1871	--------	--------	--------	--------	--------	--------	--------	--------	2,765	2,994	3,618	3,578	3,921
Births corrected as if enumerated in months of occurrence	44,404	3,468	3,961	4,213	3,974	3,567	3,215	3,269	3,432	3,536	4,054	3,794	3,921
Births as corrected, equalized to population at close of year	45,420	3,614	4,114	4,361	4,100	3,667	3,295	3,333	3,492	3,586	4,097	3,821	3,935
Births as corrected and equalized, equalized to Months of uniform length	45,462	3,667	4,040	4,282	4,160	3,601	3,343	3,278	3,429	3,898	4,023	3,577	3,864

DIAGRAM No 7. [Scale of 500 to an inch.*]



"To accompany" Statistics of Michigan 1870."

Designed by H.B. Baker, M.D.

Table 7 and Diagram No. 7 exhibit the births in Michigan during the census year as returned by registration officers, and the results of the two corrections and two equalizations which are believed to be necessary in order to approximate to the true proportion in each month or the correct number during the year.

It appears that there were 27,140 births returned by the registration officers, whereas the evidence derived from the comparison of the statistics from the two sources leads to the belief that if the births had been enumerated in the months when they occurred there would have been 17,264 more, or 44,404 births during the census year. The number omitted is therefore 63.61 per cent. of the number returned. It seems probable that if the births during the past few years, as published in the registration reports of this State, should be increased by about this per cent., the resulting statement would be nearer the truth. These computations may also be applied to the births returned by registration in the future, until the census in 1880 furnishes a new test, or until such time as it becomes possible to have the registration law amended in a way to secure a more perfect record. This is secured in some other localities by requiring parents, physicians, and others to cause a record of every birth occurring in the family or under their charge to be filed with some proper officer.

The average annual increase of population from 1860 to 1870, as shown by Table 3, page xix., was 43,517. Subtracting the deaths as returned for the census year from the births as returned (27,140—9,040=18,100) it appears that for that year 18,100 of the increase should be attributed to natural growth of population by excess of births over deaths, and the remaining 25,417 to immigration. Or if we take the increase of population for the year 1870 from Exhibit C, as it is there estimated at 53,072, then (53,072—18,100=34,972) 34,972 should be attributed to immigration. But if instead of the births and deaths as returned we employ the number of births and deaths which we have reason to believe occurred (44,404—16,802=27,602) we find that for the census year the natural growth of population by excess of births over deaths was 27,602.

MARRIAGES.

Not one-half as many marriages were enumerated by the Assistant Marshals as were recorded by the State registration officers for the same time. Perhaps the most valuable result will be the strengthening of the evidence otherwise obtained that, by no system of enumeration of births, marriages, and deaths after the year during which they occurred has passed, can anything near the number be obtained as by a system requiring persons specified to furnish to

some officer a record of them within a short and limited time after their occurrence. Tables III. and IV., pages 231 to 235 inclusive, exhibit the marriages shown by the census and by the registration returns for the State and counties by months. The census returns were not even sufficiently accurate to supply any test of the truthfulness of the registration as regards the relative number in each month. For any further facts concerning marriages, the reader is therefore referred to the State Registration Reports.

DEATHS.

Table V., page 236, exhibits for the State and for each county the deaths of males and females in each month of the census year as returned by the assistant marshals; Table VI. exhibits for the State and by counties the total deaths by months as returned by the registration officers. Supposing the deaths to be enumerated by both classes of officers precisely in accordance with instructions then the difference between the results by the two methods should equal the deaths which occurred outside the State in families who moved into the State during the year. After making allowance for counties not represented in the registration returns, this difference, as shown by Table 9,—Summary of Deaths, —was 1,851, which is altogether too large to be accounted for in this way, and would seem to show that the returns of deaths by the census marshals were more complete than were those by the supervisors and assessors. This was the case in some of the counties, as will be seen by comparing the statements opposite the several counties in tables V. and VI. For instance, the supervisors in Allegan county returned only 195 deaths, while the assistant marshals returned 327. The supervisors of Branch county returned only 180 while the assistant marshals returned 267. The supervisors of Washtenaw county returned only 266 while the assistant marshals returned 414 deaths during the same time; but in the counties of Calhoun, Hillsdale, Marquette, Muskegon, Oceana, and Saginaw a greater number were returned by the supervisors. The difference shown on Table 9 would not have been so great except for the omissions in the registration returns for the last five months of the census year, believed to be due to the length of time which elapsed before the enumeration. If the returns for the last five months had borne the same relation to each other as they did for the first seven the difference would have been only about 96. After making the corrections shown on Tables 10 and 11 the difference was only 53. As will appear further on, the number of deaths returned by either class of officers is probably far short of the number which occurred. By combining the evidence from both sources it becomes possible, as is believed, to approximate the
umber by months.

But if any comparisons are made with other States the numbers used should be those first returned by the census. As a matter of fact, however, no just comparisons have ever been made of the death-rates of the different States of this Union; and no data exists at the present time by which such comparison can be readily made. In the U. S. Census publications of 1860 and 1870 the death-rate in the several States is stated by per cent. of deaths to population. Table 1, page 3, Vital Statistics volume of the ninth census, exhibits, for the U. S. and for each State, the population, deaths, and per cent. of deaths to population for the census years 1850, 1860, and 1870. It seems to be taken for granted that this allows of a fair comparison of the rate of mortality in the several States. Reviewers, who apparently have thought they knew what they were talking about, have quite generally commented on the evidence of this table as exhibiting the comparative healthfulness or danger to life in the various States; but in the opinion of the writer the per cent. of deaths to population furnishes no reliable evidence as to the healthfulness of, or the comparative mortality in the different States; if it did the table would be reproduced here for the benefit of the readers of this volume, for such knowledge as that would indeed be valuable. The table is not withheld because of any bad showing for Michigan; on the contrary, Michigan is one of the States having a very small per cent. of deaths to population; but the total death-rate from all causes is very different at different ages. Further on, a table exhibiting the rate in this State at every age will be given, but for our present purpose it will be sufficient to notice that among persons under five and over fifty years of age the death-rate is much greater than it is at ages between these two points; therefore, in a State in which the population consists largely of persons aged under five, the death-rate should be high accordingly. See table and remarks on page xvii. The same is true of a State or locality in which a large proportion of the inhabitants are aged over fifty years. On the other hand, in such new States and Territories as contain not much population except young and middle-aged men in the prime of life, other things being equal, the death-rate should be exceedingly small. Evidence of this is apparent in Table 1, Vol. 2, U. S. Census, referred to above, but just how much of the difference in the per cent. of deaths to population in the different States is due to difference of age of inhabitants, and how much is due to local conditions favorable or unfavorable to life, cannot possibly be estimated from such tables as have thus far been published in the U. S. Census and other statistical works of this country.

No just comparison can be made between two States or localities as to the total death-rate from all causes, or from any specified cause, except by computing

for each State or locality in question a Life Table similar in plan to Table 8 in this summary, which shall exhibit for each sex the number of deaths at all ages out of a given number born, or in some such way take into consideration and make allowance for the different conditions of age and sex in the different localities. We have only to reflect for a moment that more than one-third of all the deaths in this State are of children under five years of age, and that, sooner or later, without any other especially unfavorable conditions, all human beings tend to die of old age, to realize that these conditions of age are known to control the death-rate to a very remarkable extent; and when such controlling conditions as age and sex of inhabitants are not taken into consideration, no very useful comparison can be made by simple per cent. of deaths to population in each locality. The population of each locality being different as regards age, other things being equal, the death-rate must be different. If it be asked why, knowing this to be so, the writer has inserted a column in Tables VII. and VIII., pages 244–272, giving the per cent. of deaths to population in each county, township, and city in the State, it is replied that it is partly because this *has been* considered a proper means of comparison, and, judging from their works, it is still so considered by the statisticians of this country. It is given because it has other uses besides those of direct comparison, and because the returns are not yet sufficiently correct to warrant the adoption of any more laborious methods of comparison by counties and townships. But as regards the State, very great effort has been made to form a Life Table in accordance with the views above expressed, which should exhibit the nearest possible approach to a correct statement of the death-rate at each and every age, and furnish an example, so far as methods of correcting the returns are concerned, and a means of comparison with other States whenever a similar table shall be constructed for any other State *based entirely upon evidence of the mortality in that State* without reference to the mortality in England and Wales or any other locality except the one for which the table is constructed. It has not been possible for statisticians to do this in any part of this country except in States or localities where a system of registration of deaths was in operation, and then only as some other different method of enumerating the deaths at a time different from that of the registration system has rendered it possible to correct the results obtained by one method by the results obtained by the other. This census has, for the first time, supplied that means of correction, for the mortality statistics of this State, and the effort has been put forth to make the most of the opportunity. The results attained are exhibited in Table 8,—a Life Table constructed from the mortality statistics of Michigan in 1870, corrected by means of evidence derived from

comparisons in different ways of the results of the registration and of the census returns. The methods by which the corrections have been made and also those by which were accomplished certain equalizations necessary to make the deaths comparable for the different months, may be seen by examining Tables 9, 10, and 11, and remarks concerning them. Inasmuch as the methods of correction and equalization are similar to those for births, and as they were quite fully described in that connection, it appears needless to be so explicit in details as would otherwise be necessary.

TABLE 8.—*A Life Table, for Males, constructed upon the basis of the Death-rate in Michigan during the year 1870, as computed after Equalizing the Male Population represented by Deaths, and correcting the Deaths for omissions because of time before enumeration; calculated upon the assumed number of 141,731 Males born; showing, for each age from birth to 112, the Average Years of Life after each age—the "Expectation of Life," so-called,—and the True Expectation of Life, at all Ages, computed by a method devised by the Compiler.* [a]

AGE IN YEARS	Male Population Represented by Deaths in 1870, Equalized. *b*	Deaths of Males in 1870, multiplied by 1.86. *c*	Death-rate. Number of Deaths to 100 Living. *d*	Of 141,731 Born		Average Years of Life after each Age. *e*	True Expectation of Life at each Age in years and 100ths. *f*
				Number Living at beginning of each year of Age.	Number Dying at each Age.		
—1	16,081	2,719.32	16.91	141,731	23,967	43.79	53.05
1	15,898	894.66	5.62	117,764	6,618	51.61	60.48
2	15,714	468.72	2.98	111,146	3,312	53.65	61.23
3	15,511	353.40	2.27	107,834	2,448	54.28	61.24
4	15,348	215.76	1.40	105,386	1,475	54.53	60.91
5	15,164	178.56	1.17	103,911	1,216	54.30	60.24
6	14,981	128.34	.85	102,695	873	53.94	59.48
7	14,798	87.42	.59	101,822	601	53.39	58.66
8	14,614	98.58	.67	101,221	678	52.71	57.78
9	14,431	78.12	.54	100,543	543	52.06	56.92
10	14,098	79.98	.56	100,000	560	51.34	56.04
11	13,734	55.80	.40	99,440	398	50.63	55.18
12	13,502	70.68	.52	99,042	515	49.83	54.29
13	13,268	53.94	.40	98,527	394	49.09	53.42
14	13,053	53.94	.41	98,133	402	48.28	52.52
15	12,751	50.22	.39	97,731	381	47.48	51.63
16	12,581	53.94	.42	97,350	409	46.66	50.73
17	12,394	70.68	.57	96,941	553	45.86	49.83
18	12,214	57.66	.47	96,388	453	45.12	48.98
19	12,033	106.02	.88	95,935	844	44.33	48.10
20	11,847	81.84	.69	95,091	656	43.72	47.32
21	11,608	122.76	1.05	94,435	992	43.02	46.49

[a] For methods employed in the construction of this table, see remarks following.
[b] For reasons why this equalization is necessary, see pages xxviii—xxix, and Diagrams 3 and 4, immediately preceding.
[c] Deaths increased because of evidence that only about 54 per cent. of the deaths are returned.
[d] Per cent. of deaths during the year 1870 to population, June 1st, 1870, or about the middle of the year in which the deaths occurred.
[e] Heretofore technically but inappropriately termed the "Expectation of Life." See remarks following.
[f] See remarks on a following page concerning the "Equation of Life," according to Mr. Nelson.

TABLE 8.—CONTINUED.

AGE IN YEARS	Male Population Represented by Deaths in 1870, Equalized. *a*	Deaths of Males in 1870, multiplied by 1.86. *b*	Death-rate. Number of Deaths to 100 Living. *c*	Of 141,731 Born		Average Years of Life after each Age. *d*	True Expectation of Life at each Age in years and 100ths. *e*
				Number Living at beginning of each year of Age.	Number Dying at each Age.		
22	11,369	88.70	.73	93,448	682	42.47	45.75
23	11,119	87.42	.78	92,761	724	41.78	44.98
24	10,869	72.54	.66	92,037	607	41.10	44.20
25	10,626	65.10	.61	91,430	558	40.37	43.46
26	10,376	72.54	.69	90,872	627	39.62	42.70
27	10,127	65.10	.64	90,245	578	38.89	41.97
28	9,852	66.96	.67	89,667	601	38.14	41.14
29	9,615	61.38	.63	89,066	561	37.39	40.30
30	9,364	55.80	.59	88,505	522	36.62	39.45
31	9,028	57.66	.63	87,983	554	35.84	38.59
32	8,690	78.12	.89	87,429	778	35.06	37.73
33	8,344	59.52	.71	86,651	615	34.37	36.94
34	7,993	50.22	.62	86,036	533	33.61	36.07
35	7,698	63.24	.82	85,503	701	32.82	35.15
36	7,507	46.50	.61	84,802	517	32.09	34.27
37	7,365	46.50	.63	84,285	531	31.28	33.36
38	7,338	74.40	1.00	83,754	838	30.48	32.45
39	7,028	44.64	.63	82,916	522	29.78	31.59
40	7,225	66.96	.92	82,394	758	28.96	30.67
41	6,599	42.78	.64	81,636	522	28.23	29.80
42	6,574	61.38	.93	81,114	754	27.41	28.89
43	6,349	68.82	1.08	80,360	868	26.66	28.01
44	6,123	70.68	1.15	79,492	914	25.95	27.18
45	5,898	65.10	1.10	78,578	864	25.24	26.36
46	5,898	65.10	1.10	77,714	855	24.52	25.58
47	5,223	44.64	.85	76,859	658	23.78	24.70
48	5,223	53.94	1.03	76,206	785	22.98	23.82
49	4,998	63.24	1.26	75,421	950	22.23	22.98
50	4,992	87.42	1.75	74,471	1,303	21.50	22.13
51	4,327	53.94	1.24	73,168	907	20.87	21.33
52	4,322	79.98	1.85	72,261	1,337	20.12	20.47
53	4,124	63.24	1.53	70,924	1,055	19.49	19.68
54	3,954	70.68	1.78	69,839	1,243	18.79	18.85

a For reasons why this equalization is necessary, see pages xxviii—xxix, and Diagrams 3 and 4, immediately preceding.
b Deaths increased because of evidence that only about 54 per cent. of the deaths are returned.
c Per cent. of deaths during the year 1870 to population, June 1st, 1870, or about the middle of the year in which the deaths occurred.
d Heretofore technically but inappropriately termed the "Expectation of Life." See remarks following.
e See remarks on a following page concerning the "Equation of Life," according to Mr. Nelson.

TABLE 8.—CONTINUED.

AGE IN YEARS	Male Population Represented by Deaths in 1870, Equalized. *a*	Deaths of Males in 1870, multiplied by 1.86. *b*	Death-rate. Number of Deaths to 100 Living. *c*	Of 141,731 Born		Average Years of Life after each Age. *d*	True Expectation of Life at each Age in years and 100ths. *e*
				Number Living at beginning of each year of Age.	Number Dying at each Age.		
55	3,780	83.70	2.21	68,596	1,516	18.12	18.06
56	3,608	70.68	1.95	67,080	1,308	17.52	17.37
57	3,435	100.44	2.92	65,772	1,921	16.86	16.64
58	3,264	81.84	2.50	63,851	1,596	16.35	16.04
59	3,090	59.52	1.92	62,255	1,195	15.76	15.39
60	2,919	70.68	2.42	61,060	1,478	15.06	14.65
61	2,745	66.96	2.43	59,582	1,448	14.42	13.97
62	2,744	104.16	3.79	58,134	2,203	13.76	13.28
63	2,230	63.24	2.83	55,931	1,583	13.29	12.74
64	2,229	74.40	3.33	54,348	1,810	12.66	12.07
65	2,056	96.72	4.70	52,538	2,469	12.08	11.39
66	1,940	74.40	3.83	50,069	1,918	11.65	10.84
67	1,828	72.54	3.96	48,151	1,907	11.09	10.18
68	1,716	42.78	2.49	46,244	1,151	10.58	9.51
69	1,604	66.96	4.17	45,093	1,880	9.79	8.71
70	1,503	104.16	6.93	43,213	2,995	9.19	8.04
71	1,048	66.96	6.38	40,218	2,566	8.84	7.70
72	1,046	89.28	8.53	37,652	3,212	8.41	7.25
73	955	66,96	7.01	34,440	2,414	8.15	6.92
74	854	61.38	7.18	32,026	2,299	7.72	6.48
75	728	57.66	7.97	29,727	2,369	7.28	6.02
76	589	59.52	10.10	27,358	2,763	6.87	5.63
77	491	57.66	11.74	24,595	2,888	6.58	5.36
78	406	42.78	10.53	21,707	2,286	6.40	5.16
79	325	48.36	12.26	19,421	2,381	6.09	4.87
80	315	59.52	12.60	17,040	2,147	5.87	4.66
81	230	31.62	12.94	14,893	1,927	5.65	4.44
82	210	26.04	14.28	12,966	1,852	5.41	4.23
83	183	22.32	14.52	11,114	1,614	5.23	4.09
84	170	31.62	15.70	9,500	1,492	5.04	3.93
85	137	13.02	15.91	8,008	1,274	4.88	3.80
86	100	13.02	16.12	6,734	1,086	4.71	3.64
87	95	26.04	17.10	5,648	966	4.52	3.46

a For reasons why this equalization is necessary, see pages xxviii—xxix, and Diagrams 3 and 4, immediately preceding.
b Deaths increased because of evidence that only about 54 per cent. of the deaths are returned.
c Per cent. of deaths during the year 1870 to population, June 1st, 1870, or about the middle of the year in which the deaths occurred.
d Heretofore technically but inappropriately termed the "Expectation of Life." See remarks following.
e See remarks on a following page concerning the "Equation of Life," according to Mr. Nelson.

TABLE 8.—CONTINUED.

AGE IN YEARS	Male Population Represented by Deaths in 1870, Equalized. *a*	Deaths of Males in 1870, multiplied by 1.86. *b*	Death-rate. Number of Deaths to 100 Living. *c*	Of 141,731 Born		Average Years of Life after each Age. *d*	True Expectation of Life at each Age in years and 100ths. *e*
				Number Living at beginning of each year of Age.	Number Dying at each Age.		
88	50	5.58	18.08	4,682	847	4.35	3.30
89	42	7.44	19.06	3,835	731	4.21	3.16
90	45	13.02	19.71	3,104	612	4.08	3.05
91	15	5.58	20.35	2,492	507	3.96	2.95
92	14	3.72	21.00	1,985	417	3.85	2.86
93	11	.....	21.65	1,568	339	3.74	2.78
94	15	1.86	22.30	1,229	274	3.63	2.70
95	6	.....	22.95	955	219	3.53	2.63
96	5	.....	23.59	736	174	3.43	2.55
97	5	.....	24.24	562	136	3.34	2.48
98	6	5.58	24.89	426	106	3.25	2.40
99	4	3.72	25.54	320	82	3.17	2.34
100	7	.....	26.19	238	62	3.09	2.29
101	1	1.86	26.83	176	47	3.00	2.23
102	3	.....	27.48	129	35	2.91	2.20
103	.....	.....	28.13	94	26	2.81	2.07
104	1	.....	28.78	68	20	2.70	2.00
105	2	1.86	29.43	48	14	2.62	2.00
106	.....	.....	30.07	34	10	2.50	2.00
107	.....	.....	30.72	24	7	2.33	2.00
108	.....	.....	31.37	17	5	2.08	2.00
109	1	.....	32.02	12	4	1.75	1.67
110	1	.....	32.67	8	3	1.37	1.33
111	.....	.....	66.33	5	3	.90	1.00
112	.....	.....	100.00	2	2	.50	.50
All ages	600,806	10,621.58	1.76	6,278,601	141,731	.....	.....

a For reasons why this equalization is necessary, see pages xxviii—xxix, and Diagrams 3 and 4, immediately preceding.
b Deaths increased because of evidence that only about 54 per cent. of the deaths are returned.
c Per cent. of deaths during the year 1870 to population, June 1st, 1870, or about the middle of the year in which the deaths occurred.
d Heretofore technically but inappropriately termed the "Expectation of Life." See remarks following.
e See remarks on a following page concerning the "Equation of Life," according to Mr. Neison.

The statements in Table 8 may be accepted as the nearest approaches to the truth which it has yet been practicable for the writer to reach with the material at hand. It is not maintained that they are perfect, but it is expected that further research will modify the table in some, if not in many important particulars. It is given with the belief that its statements are nearer the truth than those in a similar table in "Vital Statistics of Michigan, 1870,"—Table VII.,—which was constructed from similar material, but before it had been subjected to any correction or equalization.

In computing Table 8, the population represented by deaths in 1870 was equalized, and the deaths at each age during the year 1870 as per registration returns were multiplied by such a fraction as would increase them in the same proportion as the deaths during the census year by registration returns were increased by the correction to make them as if enumerated in months of occurrence. The number of deaths returned by registration officers for the census year ending June 1st, 1870, was 9,040, and the number of deaths, after being corrected for omissions because of time before enumeration, is 16,802, as shown by Table 10. The fraction employed in increasing the number of deaths was obtained as follows: 16,802÷9,040=1.858+, which we called 1.86. This is the ratio between the number of deaths as it would have been had the enumeration been made in months of occurrence and the number as returned. In constructing this table, it is assumed that the omissions resulting from time elapsing before enumeration were the same for males as for the total of both sexes. The death-rate is computed at each age up to that of 79 by per cent. of deaths, as increased, to the population, as equalized. The death-rate for ages over 79 being so irregular because of the small number of inhabitants at such ages, it was equalized as follows: The death-rate for the period of age from 79 to 89 inclusive was first computed, then equalized, forming an increasing death-rate from age 78 to age 90 averaging the death-rate for the period. From 90 to 110 inclusive the average death-rate was obtained and placed opposite the age 100—the medium age; the amount of increase from ages 90 to 100 being for eleven periods of age, was divided by eleven to obtain the average annual increase of death-rate from ages 90 to 100 inclusive; the death-rate for each age to 110 inclusive was then formed by using the annual increase as a common difference between each two successive ages. Although this death-rate is thus equalized, it averages the same as the death-rate computed. At age 110 we find the death-rate by this method is 32.67 per cent. of the population. There is one person returned as living at that age. It is assumed that the inhabitants all die at or before the age of 112, that being the age returned of the oldest person known to have lived or died

in the State, hence the death-rate at that age will be 100.00 per cent. The death-rate for the age 111 is estimated as midway between that at 110 and at 112.

By equalizing the death-rate as has been done for all ages over 79, any natural irregularities would be likely to be obliterated; but the result is much nearer the truth than the exceedingly irregular death-rate necessarily shown among the small number of inhabitants at such older ages, as is proven by the fact that if not equalized it will happen that the only person living at a given age will be found to have died, making the death-rate 100 per cent., while there are several persons living at ages older than that of the one who died. If the death-rate was not equalized, the Life Table must cease at the first age where all living at that age die, thus perhaps leaving out very many who have lived past that age and are still living at older ages.

If we can believe the statements in Table 9, summary of population, there were thirty-three persons aged 100 and over living in Michigan June 1st, 1870. The evidence of the age of these persons is the same as the evidence of the age of most others; without doubt extraordinary evidence should be required, for the reason that the statements are extraordinary. It is therefore possible that this Life Table extends to ages which are to a slight extent fictitious, but it is in accordance with the evidence thus far obtained, and, like all questions of accurate research, is subject to future modification or verification.

The number 141,731 persons born was assumed as the basis of Table 8 for the reason that this number leaves just 100,000 living at the age of ten years, and the table may therefore be readily compared with the American Experience Table, which is a standard, for certain purposes, in the insurance laws of this State.

Given the first, fifth, and sixth columns in Table 8, the last two are computed as follows: The "Average Years of Life after each age" was found *by dividing the aggregate time lived by all after a given age by the number living at that age.* The True Expectation of life was obtained by the following method: *Ascertain the age at which one-half the number living at the given age will have died, and subtract the given age.*

Since the publication in the "Spectator" for October 15th, 1871, of a column, similar to the last one in Table 8, as a modification of the "American Experience Table," and in "Vital Statistics of Michigan, 1870," of a similar table, the attention of the writer has, for the first time, been called to the fact that an English writer,—Mr. F. G. P. Neison,—as long ago as 1857, in his

"Contributions to Vital Statistics," published a formula for obtaining what he termed the "Equation of Life," and which a reviewer has stated to be the same as I have called the "True Expectation of Life." The writer has also at different times published reasons why what *has been* called the "Expectation of Life" is not evidence of the probable duration of life after any given age, in other words, it is not a true expectation of life. Mr. Neison, in the volume alluded to above, does not say that the term has been inappropriately used, but he distinctly states his belief that "For many purposes the mode of representing the value of life at various ages under the expression 'Expectation of Life' will be found inadequate." He then proceeds to contrast the "Equation of Life" with the so-called "Expectation of Life" in England and Wales at various ages, and gives his formula for the equation of life. The writer therefore concedes priority to Mr. Neison, but does not accept his formula or his nomenclature, preferring to continue to make the computation by the ordinary arithmetical processes, in accordance with the rule given above, and to designate the result by words having the exact signification intended, as defined in our standard dictionaries. In Webster's Dictionary it is said that "Expectation is founded upon some reasons which render the event probable." Expectation of Life, therefore, is equivalent to Probable Length of Life, or Chances of Life expressed in time, which is the idea denoted by the figures in the last column of Table 8 and in the column referred to in Neison's tables; and this idea, it is believed, is better conveyed by the term "Expectation of Life" than by "Equation of Life," which involves an unstated factor to complete the equation. The writer has headed this column "True Expectation of Life" to distinguish it from the one so long improperly designated by the same term excepting the word "True," and for the reason that he continues to maintain that the term "Expectation of Life" cannot, with due regard for truth, be applied to the column over which it has for so long been printed, and which has simply exhibited the average duration of life after the given age, and not the expectation of life, if those words are employed to express any defined meaning. A reviewer has replied that the term is employed "technically," as is the printers term "pi," which is perhaps analogous but so dissimilar to the article of pastry, the name of which sounds the same, and is used with such different context that it does not mislead any one. It does not seem probable, however, that the term in question was at first intended as a technical term; if it be admitted that it was, it seems to imply a design to mislead, which it is not just to attribute to such men as computed the Carlyle Table, the American Experience Table, etc.; but whether now employed technically or otherwise, it does tend to mislead whenever it appears, as it does in the two tables just mentioned, over a column containing

simply the average duration of life. To abandon and abolish the term seems more difficult than to compute a useful column over which it may truthfully be placed, and this is done in Table 8, while the column over which it has generally appeared may be headed "Average Years of Life after each Age," as the writer has heretofore suggested, or "Mean Future Duration of Life," as has lately been done by Mr. Elliott in the Vital Statistics volume U. S. Census of 1870.

At the bottom of Table 8 the male population represented by deaths at all ages is shown to have been 600,806, and the deaths of males after being increased were 10,621.58. The total death-rate of males at all ages computed from these two factors was 1.76 per cent., instead of .94 per cent. as it is shown by Table VII. to have been for both sexes in the census year, taking only the deaths as returned. The constant male population which, according to the death-rate of Table 8, would be maintained in this State by 141,731 annual births is 6,278,601. The constant male population maintained by one million annual births with the same death-rate would be 44,299,419. There seem to be no complete life tables in this country based entirely upon the evidences of mortality in the locality for which such table is constructed with which to compare this statement, but it may be compared with the results computed for both sexes in other countries. Dr. Edward Jarvis, in a pamphlet entitled "Immigration," published in 1872, says: "One million births, in each year, through several generations, will support a constant population in England, 40,858,204; in France, 34,938,543; in Ireland, 22,505,101." According to the death-rate of males in Michigan in 1870, computed from the deaths as first returned, one million births of males in each year will support in this State a constant male population of 59,803,792. But by the death-rate computed after making the corrections described in this volume one million births of males will maintain a constant population of 44,299,419. This, it will be seen, still shows a smaller death-rate in Michigan than in any of the foreign countries named.

After making the several corrections which have been pointed out, we have reason to believe that the number of births which occurred in Michigan during the year 1870 was, as shown in Table 6, 44,404. According to the death-rate shown in Table 8, this number of births of males annually would maintain a constant male population of 1,967,114. If the total population continues to increase at the same rate as from 1860 to 1870, it will nearly equal that number in 1880, as shown on pages xiv. and xv. The total births being 44,404, the number of males born during the year was, probably, about 23,056. Out of 23,056 males born, there would be living at the age

of twenty years, 15,469; at the age of forty, 13,403; at sixty, 9,933. By the second column of Table 8 the equalized male population at the age of twenty was 11,847, at the age of forty it was 7,225, and at the age of sixty it was 2,919. The younger the age the nearer in harmony are the two propositions. If the calculated death-rate is as large as the true one, this shows that the population represents a rapidly increasing number of births, as is doubtless true, the males aged forty being what are left out of a less number of births than 23,056, and the males aged sixty representing a still less number of births.

EXHIBIT D.—*Of 1,000,000 born, the Number of Survivors at the ages of Twenty, Forty, and Sixty years in various countries, and of the same Number of Males born in Michigan, the Number of Survivors at the same ages.*

Ages.	Sweden. *a*	England. *a*	France. *a*	Holland. *a*	Belgium. *a*	Austria. *a*	Ireland. *a*	Ohio. *b*	Michigan, Males. *c*	Michigan, Males. *d*
20	669,800	662,756	629,901	609,020	534,500	521,300	501,500	786,598	810,920	670,925
40	567,000	588,584	464,869	489,840	408,890	.....	396,200	728,424	750,952	581,840
60	384,900	367,827	205,006	311,730	272,420	.....	189,500	614,514	633,519	430,816

a From "Immigration," by Dr. Edward Jarvis.

b Estimated by Hon. Isaac R. Sherwood. See page 242, Statistical Report of Secretary of State of Ohio for 1872: "The estimate is based upon the mortality statistics of three years, 1870-71-72."

c Based upon the death-rate computed from deaths as first returned.

d Based upon the corrected death-rate shown in Table 8 of this summary.

TABLE 9.—*Exhibiting for the State and Counties, by Months, the Total Number of Deaths in Families residing in Michigan June 1st, 1870, as shown by the Census; the Number of Deaths in Families residing in Counties from which no returns of Deaths were received for the Registration Reports; the whole Number of Deaths, according to the Census, in Families residing in counties represented by Registration Returns; the Total Number of Deaths in the State as returned for the Registration Reports; and the difference between the Numbers returned by the two Methods, for the year ending May 31st, 1870.*

	Year Ending May 31, 1870.	MONTHS.												
		1869.							1870.					
		June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	Unknown.
Deaths in families residing in Michigan June 1st, 1870, as per census	11,182	687	799	1,118	1,097	905	727	801	800	977	1,134	996	1,119	22
Deaths, as per census, in families residing in counties from which no returns were received for registration reports	243	10	20	19	12	9	9	11	27	26	28	28	44	--------
Deaths, as per census, in families residing in counties represented by registration reports	10,939	677	779	1,099	1,085	896	718	790	773	951	1,106	968	1,075	22
Deaths in the State as per registration reports	9,088	630	687	1,068	1,194	874	686	836	421	553	724	678	689	48
Difference between deaths in the State, as per registration returns, and deaths as per census in families residing in counties represented by registration returns	1,851	47	92	31	-109	22	32	-46	352	398	382	290	386	—26

TABLE 10.—*Exhibiting, by Months, the Number of Deaths in Michigan during the Census year ending June 1st, 1870, as returned by Registration Officers; the Number during last five months of the year, corrected by calculation for one year longer time before Enumeration than elapsed before Enumeration of Deaths for first seven Months,—giving the calculated Number that would have been returned had they been Enumerated in May, 1870, instead of May, 1871; the Number, for first seven Months of Census year as returned by Registration officers, corrected by calculation, and for last five Months re-corrected,—giving the calculated Number of Deaths as if Enumerated in Months of occurrence, as is made the case with May by the first correction; also, the Number of Deaths, by Months, Equalized to a supposed constant Population equaling the Population at the close of the year; and the Number of Deaths thus Estimated, Equalized to Months of Uniform length of 30.44 days.*

	Total.	1869.							1870.				
		June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.
Deaths as returned by registration officers	.....	.....	.....	.....	.....	.....	.....	.....	421	558	724	678	689
Per cent. of deaths to be added for correction for one year additional time before enumeration	.....	.....	.....	.....	.....	.....	.....	.....	98.09	98.09	98.09	98.09	98.09
Deaths to be added for above correction	3,006	.....	.....	.....	.....	.....	.....	.....	413	542	710	665	676
Deaths, if enumerated in May, 1870, instead of May, 1871	.....	.....	.....	.....	.....	.....	.....	.....	834	1,095	1,434	1,343	1,365
Deaths as returned by registration officers	*a* 9,040	630	687	1,068	1,194	874	686	836	.....	.....	.....	.....	.....
Per cent. of deaths to be added for correction for time before enumeration	.....	89.92	81.75	73.58	65.41	57.24	49.07	40.90	32.73	24.56	16.39	8.22	.00
Number of deaths to be added for correction last mentioned	4,756	566	561	785	780	500	336	342	272	269	235	110	00
Deaths corrected as if enumerated in months of occurrence	16,802	1,196	1,248	1,853	1,974	1,374	1,022	1,178	1,106	1,364	1,669	1,453	1,365

Per cent. of deaths to be added to equalize them to population at close of year	.....	4.21	3.86	3.51	3.16	2.81	2.46	2.11	1.76	1.41	1.06	.71	.35
Deaths to be added to equalize them to population at close of year	885	50	48	65	62	89	25	25	19	19	18	10	5
Deaths as corrected, equalized to population at close of year	17,187	1,246	1,296	1,918	2,036	1,413	1,047	1,203	1,125	1,388	1,687	1,463	1,370
Days and hundredths by which the months should be increased or diminished to equalize them to a uniform length	.....	+.44	-.56	-.56	+.44	-.56	+.44	-.56	-.56	+2.44	-.56	+ 44	-.56
Number by which the deaths should be increased or diminished to equalize them to months of uniform length	+24	+18	-23	-35	+30	-25	+15	-22	-20	+120	-30	+21	-25
Deaths corrected and equalized to months of uniform length	17,211	1,264	1,273	1,883	2,066	1,388	1,062	1,181	1,105	1,508	1,657	1,484	1,345

a Excluding 48 in unknown month.

TABLE 11.—*Exhibiting, by Months, the Number of Deaths in Michigan during the Census Year ending June 1st, 1870, as returned by Census Officers; the Number, corrected by calculation, for time elapsing before Enumeration,—giving the calculated Number that would have been returned had they been enumerated in Months of occurrence; the Number Equalized to a supposed constant Population, equaling the Population at the close of the year; and the Number of Deaths, thus estimated, equalized to Months of uniform Length of 30.44 days.*

	Total.	1869.							1870.				
		June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.
Deaths, as returned by census officers, for census year...	a 11,160	689	799	1,118	1,097	905	727	801	800	977	1,184	996	1,119
Per cent. of deaths to be added as a correction for time elapsing before enumeration	.....	98.09	89.92	81.75	73.58	65.41	57.24	49.07	40.90	32.73	24.56	16.39	8.22
Number of deaths to be added to above correction.....	5,695	674	718	914	807	592	416	398	327	320	279	163	92
Deaths if enumerated in months of occurrence.....	16,855	1,361	1,517	2,032	1,904	1,497	1,143	1,194	1,127	1,297	1,413	1,159	1,211
Per cent. of deaths to be added to equalize them to population at close of year.....	.....	4.21	3.86	3.51	3.16	2.81	2.46	2.11	1.76	1.41	1.06	.71	.35
Deaths to be added to equalize them to population at close of year.....	b 407	57	59	71	60	42	28	25	20	18	15	8	4
Deaths, as corrected, equalized to population at close of year.....	17,262	1,418	1,576	2,103	1,964	1,589	1,171	1,219	1,147	1,315	1,428	1,167	1,215

Days and hundredths by which the months should be increased or diminished to equalize them to uniform length	.....	+.44	-.56	-.56	+.44	-.56	+.44	-.56	-.56	+?.44	-.56	+.44	-.5
Number by which the deaths should be increased or diminished to equalize them to months of uniform length	+13	+21	-28	-38	+29	-28	+17	-22	-21	+114	-26	+17	-2
Deaths corrected and equalized, equalized to months of uniform length	17,275	1,439	1,548	2,065	1,998	1,511	1,186	1,197	1,126	1,429	1,402	1,184	1,1

a Excluding 22 in unknown month.

b Estimated population in 1869 was 1,131,600; in 1870, by same estimate, it was 1,184,672. See exhibit C., page lxxx. Assuming the increase of population to have been the same in every month of the year, the average population in which the deaths were collected was 1,158,136. Then 1,158,136 : 16,855 : : 1,184,672 : x, whence x equals 17,241 : x—16,855—386— the number to be added to equalize to population June 1st, 1870. The discrepancy between this and the result (407) is due to the fact that in this table the number of deaths in the months opposite which the greatest per cent. is placed chanced to be slightly larger than the average. It is as near as is practicable, and Exhibit C, upon which this estimate is based, is offered only as a method of estimating the approximate annual increase of population.

In Table 10 the deaths are corrected in the same manner and for precisely the same reason as were the births in a similar table on page lxxxv. The per cent. of omissions on account of time before enumeration was ascertained by the following proportion:

Census.				Registration.		
December.		January.		December.		January.
801	:	800	: :	836	:	x

whence x=834. 834—421=413=98.09 per cent. of the number returned, which was 421. It will be noticed that the per cent. of deaths to be added for omissions because of one year additional time before enumeration is 98.09, while for births it was 72.36, or 25.73 per cent. less than for deaths. Possibly this is owing to the fact that in the case of most of the births the living representatives are present to remind the friends and the officer of their birth and existence, while the absent dead are more frequently forgotten.

In correcting the number of deaths as returned by census officers, Table 11, it is assumed that the same per cent. of deaths were omitted for the same length of time elapsing between the occurrence and the enumeration as in the returns by registration officers. The corrections are made in the same manner as those on the other similar tables.

AVERAGE AGE.

It will be seen from the sixth column of Table VII., page 244, that the average age of persons who died was not very great. Of males it was 25.17, of females 24.39 years. This proves to be about the same as for all living, as will be seen from Table I., page 2, the average age of all living being of males 24.91, of females 23.68 years. If we assume that the mortality at the different ages was in about the same proportion during the census year as the ordinary mortality throughout all years, this would seem to indicate that the deaths enumerated were something near a fair sample of those which occurred. The average age of the living, however, would doubtless have been slightly different if the age had been more correctly given, the displacements shown in Diagrams Nos. 3 and 4 having some little effect on the average age.

The rule used for obtaining the average age was as follows:—Multiply the number at each age by the age at last birth-day, add the results, and then add one-half month for each person under one year, and one-half year for each person over one year of age, and divide the product by the whole number of inhabitants, or persons dead, as the case may be, less the number at unknown ages.

DEATHS OF FOREIGN-BORN INHABITANTS.

In connection with the relation shown in Table VII., page 244, between the per cent. of deaths of native and of foreign born inhabitants to population, certain facts should be considered which will modify very materially the conclusions which would otherwise be reached from the evidence of the table alone. Something more than one-third of all deaths in this State are of children under five years of age. Now, the children born in this country of foreign parents are included in the native population; their deaths are also included in the deaths of natives. On the other hand, very few children under five years of age immigrate into the State, the foreign born inhabitants are mainly of the middle ages, their death-rate, other things being equal, should be about that of persons in middle life. As a matter of fact, the average death-rate of those aged 15 to 65 was just about what is stated for the foreign born. That is, computing the death-rate from the deaths as returned, without any correction, just as is done in Table VII. The condition of the native and foreign born inhabitants being different as regards age, and the death-rate being different at different ages, the death-rate of the two cannot properly be compared in a direct manner. In order to make a proper comparison between them, it would be necessary to compute a Life Table for each class of inhabitants. We have seen above, however, that, so far as the adults are concerned, the death-rate is, probably, about the same for foreign-born as for native inhabitants. The death-rate of children born of native parents should be compared with that of children of foreign-born parents. This has not yet been worked out in this State.

TABLE 12.—*Exhibiting, by Sex the Number of Children under One Year of Age who Died in Michigan during the Census Year ending June 1st, 1870; Distinguishing the months in which they Died, their age at Death in months, the months in which they were Born, and whether Born during the Census Year or in the Previous Year.* [a]

Years & Months in which Births & Deaths Occurred.		Number Born in each Month of Census Year.				Ages at Death, in Months.												Number Born in Each Month of Previous Year.			Deaths by Months.							
		Years.	Total.	Sex.	Number of each Sex.	-1.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Number of each Sex.	Total.	Years.	Of those Born in Census Year,			Of those Born in Previous Year.		Total Aged Under one Year.	
																					By Sex.	Total.		By Sex.	Total.	By Sex.	Total.
1868—1869.	June	1869.	213	Males	131	17	29	7	3	4	1	5	6	2	4	3	3	----	----	1868.	17	30	1869.	67	122	84	152
				Females	82	13	20	8	3	3	4	2	3	1	7	2	2	----			13			55		68	
	July		238	Males	127	17	38	16	5	8	7	11	3	4	7	9	7	3	5		55	78		77	147	132	225
				Females	111	9	14	12	9	6	4	6	8	6	9	7	3	2			23			70		93	
	August		192	Males	98	13	39	16	13	15	14	18	9	11	3	12	15	10	15		68	134		110	210	178	344
				Females	94	15	44	7	19	11	8	14	9	3	10	13	13	5			66			100		166	
	Sept.		181	Males	111	23	32	17	12	11	16	9	8	12	11	7	8	28	55		84	151		82	145	166	296
				Females	70	14	26	10	17	12	11	4	8	5	8	8	7	27			67			63		130	
	October		104	Males	58	16	38	7	8	5	6	3	3	8	4	4	3	29	59		74	131		31	63	105	194
				Females	46	7	22	11	14	3	2	8	4	4	6	2	6	30			57			32		89	
1869—1870.	November		141	Males	81	10	19	6	9	3	7	5	2	5	1	4	1	23	56		54	87		18	27	72	114
				Females	60	9	11	2	4	5	2	2	2	2	1	2	--	33			33			9		42	
	December		122	Males	73	15	32	3	8	13	3	8	4	2	4	--	2	35	58		82	134		12	27	94	161
				Females	49	7	15	6	10	4	5	5	5	2	3	1	4	23			52			15		67	
1870—1869.	January	1870.	141	Males	74	20	23	8	3	4	4	9	8	2	3	1	2	43	79	1869.	79	159	1870.	8	16	87	175
				Females	67	13	26	7	7	6	7	8	6	2	4	1	1	36			80			8		88	
	February		143	Males	79	26	28	12	14	4	5	6	6	2	3	--	1	48	84		103	183		4	10	107	193
				Females	64	15	33	3	6	5	2	11	3	2	--	3	3	36			80			6		86	
	March		114	Males	68	23	38	10	10	6	4	13	5	8	4	2	4	48	82		121	211		6	17	127	228
				Females	46	17	28	9	6	12	2	5	3	4	4	6	5	34			90			11		101	
	April		96	Males	54	26	32	8	6	6	4	6	10	5	10	8	1	57	120		121	205		1	2	122	207
				Females	42	16	23	10	6	3	1	4	3	7	6	5	1	63			84			1		85	
	May		43	Males	23	23	28	13	7	10	7	7	3	4	4	7	6	92	173		119	225		----	----	119	225
				Females	20	20	26	6	11	6	4	10	4	6	6	3	4	81			106			----		106	

Deaths by Ages.																										
Of those Born in Census year.	1869—1870.	....	Males....	977	229	347	100	77	51	34	49	32	19	18	15	6	....	....	.....	977	....	.....	....	....	.....
		....	Females..	751	155	268	71	81	44	23	43	19	19	16	8	4	....	....	.....	751	....	.....	....	....	.....
		1,728	Total....	....	384	615	171	158	95	58	92	51	38	34	23	10	....	....	.....	....	1,728	.....	....	....	.....
Of those Born in Previous year.	1868—1869.	....	Males....	....	..	29	23	21	38	44	51	35	46	40	42	47	416	....	.....	....	....	416	....	....	.....
		....	Females..	....	..	20	20	31	32	29	36	39	25	48	45	45	370	....	.....	....	....	370	....	....	.....
		....	Total....	....	..	49	43	52	70	73	87	74	71	88	87	92	....	786	.....	....	....	.....	786	....	.....
Of all Aged under one year.	.....	....	Males....	....	229	376	123	98	89	78	100	67	65	58	57	53	....	....	.....	....	....	.....	....	1,393	.....
		....	Females..	....	155	288	91	112	76	52	79	53	44	64	53	49	....	....	.....	....	....	.....	....	1,121	.....
		....	Total....	....	384	664	214	210	165	130	179	125	109	122	110	102	....	....	.....	....	....	.....	....	....	2,514

a The central part of this table, embracing the main idea, has been invented by Mr. R. B. Callahan of this State Department: in adding the bottom and side parts of the table to facilitate methods of footing, he has had the assistance of the compiler, who regards Mr. Callahan's invention as a valuable contribution to the science of statistics.

Inasmuch as the death-rate is larger during the first year of life than at any other age, short of extreme old age, it seems important to study it a little more closely, more especially as a large proportion of the deaths among infants are believed to result from removable causes. Writers upon this subject have sometimes made the error of confounding a statement of the number of children who die before reaching the age of one year with a statement of the number who will die before the close of the year in which they were born,—two quite different statements, both of which are exhibited in Table 12—Summary of Deaths. Reflecting upon an apparent error of this kind in a statistical work, the writer requested two clerks at work upon the census to submit plans by which from a simple statement of the month of death and the age at death, as given in Schedule 2 and in the registration returns for those aged under one year, could be separately and rapidly compiled the number of deaths of those who were born in each month of the year of death, and of those who were born in each month of the previous year. Table 12 of this summary has resulted from this problem, the principle upon which it is based having been devised by Mr. Callahan. The table seems to answer the requirements perfectly. Although somewhat complicated in its construction it is believed that its statements may be easily understood, as may also, by means of the following explanations, the methods by which the statements have been reached:

The heavy angling line running diagonally through the table separates the deaths of children born within the census year from the deaths of those born in the year previous. The diagonal lines of figures separated from others by light and by dotted angling lines at the left of, and parallel to, the heavy diagonal line, exhibit, by months, those who were born within the census year; the first angling line of figures at the left of the heavy line being for the month of June, the second for July, etc. The footings of these lines of figures are written at the left of the central part of the table opposite the months in which the children were born.

The diagonal lines of figures separated by light and by dotted angling lines on the right of, and parallel to, the heavy line, exhibit, by months, those who were born during the year previous to the census year, being the year ending June 1st, 1869; the first line of figures representing those born in May, the second those born in April, etc. The footings of these figures are found on the right of the centre of the table opposite the months in which the children were born.

The perpendicular columns of figures exhibit the deaths at each age in months.

The horizontal lines of figures across the table exhibit the deaths by months.

The footings for columns representing deaths by ages, of those born in each year, and for the total deaths of those aged under one year, are written at the bottom of the table.

The footings for lines of figures representing deaths, by months, of those born in each year, and the total of deaths of those aged under one year, are shown at the right of the table.

That division of the table above the horizontal rule across the middle of the table and at the right of the dashed line, exhibits those who were born during the year 1868, previous to the census year, and died during the year 1869.

That division above the before-mentioned rule and between the heavy diagonal and the dashed line, exhibits those who were born during the year 1869, previous to the census year, and died during the same year, within the census year.

That portion of the table at the right of the heavy diagonal line and below the rule exhibits those who were born within the year 1869, previous to the census year, and died during the year 1870, within the census year.

That division of the table above the rule and at the left of the heavy diagonal line exhibits those who were born during the latter part of the year 1869 and died during the same year, within the census year.

That portion of the table below the rule and between the dashed line and the heavy diagonal line exhibits those who were born during the year 1869, within the census year, and died during the year 1870.

That part of the table below the rule and at the left of the dashed line shows those who were born during the year 1870 and died during the same year, within the census year.

For the convenience of statisticians or others who may wish to employ a similar table or to study this a little more closely, the manner of using this invention for statistical purposes is stated as follows: One man calls from the schedule the month of death and the sex of the decedent, followed immediately by the age at death, in months; another man checks (1) for each death, opposite the month called, in the column for the age called. The check-marks in each place are then footed, thus: $\overset{1111}{1}\,5$. By footing the numbers thus obtained in different ways, we separate the deaths by months and also deaths by ages into those of children born in census year and of those born in previous year.

To obtain the deaths by months, all the numbers for the several months which are on the left of the heavy diagonal line are footed, placing the results on the same lines in columns on the right, headed "Census Year," giving one line for each sex. All the numbers on the right of the heavy diagonal line

are footed, placing the results in columns on the right, headed "Previous Year," giving one line for each sex. The footings of these columns will exhibit the total deaths by months of those aged under one year.

To obtain the totals for deaths by ages, foot all the figures on the left of the heavy diagonal line in each column and place the results at the bottom of the table on the lines designated as for "Census Year," giving one line for each sex. Foot all the figures in each column which are on the right of the heavy diagonal line, and place the results at the bottom of the table on the lines for "Previous Year," giving one line for each sex. The footings of these lines will exhibit the total number of deaths of those aged under one year, by age at death in months.

The diagonal lines of figures on the left of the heavy diagonal line are to be footed towards the top and to the left, placing the results in a column opposite the month in which they were born, as indicated by the course of the dotted lines. The footing of this column will show the number of those who were born during the census year and died during the same year.

The diagonal lines of figures on the right of the heavy diagonal line are to be footed towards the bottom and to the right, placing the result in a column on the right, opposite the month in which the births occurred, as indicated by the dotted lines. The footing of this column will show the total number of those who died during the census year who were born during the previous year.

PART III.—AGRICULTURE.

Perfect knowledge of one's business is undoubtedly an important element in its successful pursuit. Agricultural statistics, in so far as they are accurate, are extremely important to persons and corporations dependent for support upon the trade in or the movement of agricultural products; but in some way they should be made particularly useful to persons actually engaged in agricultural pursuits, by supplying them with accurate knowledge concerning the business in which they labor. In order that this may become possible, however, the very class of persons who should derive the greatest benefit must supply the material for accurate statistics. Whenever they shall do this, statisticians will be only too glad to work up such material into useful forms by making such computations and combinations as will render it possible to deduce positive answers to numerous questions of practical importance to the people.

While certain items in the agricultural statistics are quite reliable, certain others are not so reliable. Upon this subject it may be well to quote the remarks of the Superintendent of the Ninth U. S. Census, as found on page 72, Advance Sheets of Statistics of Agriculture: "The agricultural statistics of the United States under the present census law, being obtained by the visitation of each farm in turn, attain a high degree of accuracy in respect to all crops which are of considerable importance, either for the whole country or for the particular section under enumeration." * * * "The census has little authority in respect to minor productions. Where a crop is of small importance, or is only occasionally cultivated, the assistant marshal will naturally and almost inevitably fail to put the question at every house. The farmer, on the other hand, on account of its little importance among the products of the year, will fail to mention it, and the result will be an inadequate representation of that crop." * * * "This much is true, however, that certain crops which are only rarely cultivated, and that in small amounts, become of importance in some single section and are there returned with reasonable completeness. If, then, due allowance be made for the omissions in the sections where the crop is of little account, a very tolerable result for the entire country may be reached."

"This frank admission in regard to the slight value of the statistics of the census in respect to the minor crops should have no effect to disparage the

authority of its statements in respect to the staple products of the country as a whole, or of any section. The very laws of mind by which the former lose even the slight attention they deserve, give the strongest assurance for the general completeness and correctness of the latter."

So far as relates to most crops, wages, etc., agricultural statistics differ from statistics of the population as to age, sex, nativity, etc., or of the births, marriages, and deaths, in that the facts called for are to a much greater extent unknown to the persons called upon to give the information, and are consequently in a greater number of cases only estimates made by the thousands of different persons interrogated, many of whom have very little knowlege of the facts desired, or practice in estimating quantities or values. Very many farmers can give accurately the age, sex, nativity, date of birth or death of any member of the family; they can state correctly the number of their horses, cattle, sheep, and swine, the number of pounds of wool, and perhaps form something like an approximate estimate of the quantity of wheat raised; but there are many of the other questions of the census, such as the amount of wages paid, the amount of butter made, of milk sold, etc., etc., which they cannot so readily answer, for the reason that having kept no record or written account the facts are unknown to them, and they can form no useful estimate in the short time while the census marshal is waiting for their answers. The result is, that as regards some of the items, instead of being collections of known facts, the statistics are simply collections of rough estimates, useful as such, but not of the highest value. If blank schedules were distributed some little time before the visit of the marshal, much more reliable statistics would be collected, and in addition to that, much useful knowledge *of their own affairs* would be gained by those who, by reading over the questions with a view to answering them, would be brought to examine into the facts more closely and would thus become possessed of positive knowledge in the form of answers to definite questions relating to their own business which they would not otherwise obtain. This system would, without doubt, each time, induce some persons in each locality to begin a record of the most important of farm operations. The possession of such knowledge would lead to its expression and dissemination; besides, one is never more strongly in possession of a fact than after it has been definitely communicated to another.

We have seen in connection with the subject of births, how great are the errors in enumerating such facts as are, or have once been, positively known, but which are vitiated because of a prolonged period of enumeration; we here see a difficulty of another kind. The first mentioned error might be avoided by having the census enumerations all completed in one day, and this could be

successfully accomplished by having "prior schedules" distributed freely among the people. The last mentioned fault can only be wholly remedied by the adoption among the people of a thorough and general system of recording the facts desired, and this cannot soon be expected; but much would be accomplished by a thorough distribution of schedules of questions in advance of the census enumeration. "Prior schedules," then, would be useful in different ways: first, in rendering the statistics much more accurate; and second, in aiding many persons interrogated to form clearer and more useful ideas of their own business, and this would result in the more general dissemination of useful knowledge.

When we reflect that so soon as the people can be brought to appreciate the great value of exact knowledge, compared with the "guess-work" which pervades so much of our present knowledge of these subjects, and to realize that in order to obtain this useful knowledge it is requisite that each individual simply ascertain and tell the exact truth concerning his or her own business, in the interest of humanity, it would seem as if the time cannot be far distant when it shall become possible to obtain statistics which will bear comparison with the material supplied by intelligent and accurate observers to the workers in other sciences.

A prominent lecturer on practical agriculture tells us that there is not yet a science of agriculture; that the necessary number of well established facts have not yet been collected out of which to form useful scientific generalizations in accordance with the inductive method of philosophy; and still men are, and have been since the early infancy of the human race, dependent for their existence upon the art of agriculture. Those who have pursued less useful but more ornamental or pleasing employments have long since collected and recorded the necessary facts, and a science has been formed to aid and supplement the art of painting—for the principles of perspective are essentially scientific; there is a science of music; there are general principles of rhetoric; in short, there are numerous sciences for the adornments of life, and for the reception and expression of the pleasant emotions; but still the millions whose daily food is a product of agricultural labor wait for a science of agriculture, simply for the reason that the thousands or perhaps millions of laborers in this field have thus far failed to record a sufficient number of well established facts concerning what they have or should have observed, to render it possible to construct a science. Truly it would seem as if there were need of agricultural statistics,—not of the kind constructed from estimates, but of accurate records of facts relating to agriculture; facts, the expression of which can be reduced to accurate statements of numbers, weights, or measures. This is what is

required for the organization of a science, and compliance with these essential conditions is what has lately rendered it possible for the science of chemistry to advance with such astonishing rapidity, overcoming all obstacles with its patient numbering, weighing, measuring, and comparing. Much as agriculture is already indebted to chemistry, perhaps its greatest debt should be for its method of research. It may well be doubted if agriculture could be aided so rapidly or effectually in any other way than by the general adoption of the methods of research and habits of intelligent observation employed in chemistry, which consist largely in patiently recording facts by weight, measure, and number, and in carefully comparing and classifying the results. Whenever the great army of agriculturists can be induced to adopt such methods, there will soon be accurate agricultural statistics and a noble science of agriculture.

In the meantime it is matter for congratulation that the present statistics are so much in advance of any previous ones.

TABLE 1.—*Number of Acres of Improved and of Unimproved Land in Farms, and Per Cent. of Unimproved to Total Land in Farms in Michigan at the time of the several U. S. Censuses of 1850, 1860, and 1870.*

YEARS OF CENSUS.	ACRES OF LAND IN FARMS.			Land in Farms. Per Cent. of Unimproved to Total.
	Total.	Improved.	Unimproved.	
1850	4,383,890	1,929,110	2,454,780	56.0
1860	7,030,884	3,476,296	3,554,588	50.5
1870	10,019,142	5,096,939	4,922,203	49.1

TABLE 2.—*The Total Number and the Average Size of Farms in Michigan at the time of the U. S. Censuses of 1850, 1860, and 1870, and the Number of Farms of different sizes in 1860 and 1870.*

YEARS OF CENSUS.	TOTAL NUMBER OF FARMS.	Average Size of Farms in acres of land improved and unimproved.	NUMBER OF FARMS CONTAINING THE NUMBER OF ACRES OF IMPROVED LAND STATED BELOW.							
			Under 3.	3 to 10.	10 to 20.	20 to 50.	50 to 100.	100 to 500.	500 to 1000	1000 and over.
1850	34,089	129	.....	.....	.....	.....	.....	.....	.....	.....
1860	62,422	113	.....	1,549	6,608	25,430	19,679	9,080	40	3
1870	98,786	101	134	6,763	18,170	38,795	27,687	12,175	57	5

The material for this and for the preceding table was taken from pages 340–1 Advance Sheets of Volume III., Ninth Census of the United States.

TABLE 3.—*Exhibiting, for the State, and by Counties, the whole Number of Farms of all sizes, and for Each Farm, the Average Number of Acres of Improved Land and of Woodland, the Average Value, the Average Value of Products, Betterments, etc., and the Average Amount of Wages Paid for Labor; also, the Number of Farms containing different specified Numbers of Acres of Improved Land, in Michigan, June 1st, 1870.*

STATE AND COUNTIES.	Whole Number of Farms.	Average for Each Farm.					a Number of Farms containing the Number of Acres of Improved Land stated below.							
		No. of Acres of Improved Land.	No. of Acres of Woodland.	Value, in Dollars.	Value of Products, Betterments, etc., in Dollars.	Amount of Wages Paid for Labor, in Dollars.	Of all Sizes.b	Under 3 Acres.	3 and under 10.	10 and under 20.	20 and under 50.	50 and under 100.	100 and under 500.	500 and over.
State	98,647	51.58	42.39	4,086	883	87	98,786	134	6,763	13,170	38,795	27,687	12,175	c 62
Alcona	11	29.00	88.54	2,127	659	300	12	.....	.....	2	9	.....	1	.....
Allegan	2,441	42.72	44.19	3,649	777	79	2,441	.....	84	385	1,289	624	159	.....
Alpena	23	21.82	95.47	1,730	555	517	23	.....	5	11	5	2	.....	.....
Antrim	385	11.64	10.29	1,050	261	26	386	55	160	93	72	5	1	.....
Barry	2,792	50.25	33.55	3,410	644	68	2,782	.....	110	317	1,251	774	330	.....
Bay	271	28.21	59.15	2,762	669	80	271	.....	31	76	135	22	7	.....
Benzie	365	13.47	132.59	1,190	241	10	364	.....	162	113	83	6	.....	.....
Berrien	2,481	52.45	38.39	6,066	1,074	137	2,460	.....	96	288	1,056	717	299	d 4
Branch	2,709	55.48	33.17	4,575	741	41	2,689	.....	48	190	1,144	678	328	1
Calhoun	3,020	72.52	30.66	5,637	1,066	101	3,019	.....	102	192	912	1,061	747	5
Cass	2,403	67.61	40.29	5,360	931	118	2,401	.....	34	163	840	858	502	4
Charlevoix	227	12.11	10.62	1,078	249	16	227	.....	120	71	31	5	.....	.....
Cheboygan	31	45.90	69.45	3,465	1,217	169	31	.....	1	3	17	7	3	.....

a The eight columns under this sub-heading are taken from Page 354, Advance Sheets, of Volume III., Ninth Census of the United States. The number of farms containing the number of acres specified are only those having the specified number of acres of improved land.

b The first column contains the number of farms as carefully compiled in this Department from the Schedule on file; the seventh column, as stated above, was copied from the volume compiled at Washington. They do not exactly agree. They are compiled not from the same manuscript, but from different ones, both copies of the original.

c Five contain 1,000 and over. d One contains 1,000 and over.

TABLE 3.—CONTINUED.

COUNTIES.	Whole Number of Farms.	Average for Each Farm.					a Number of Farms containing the Number of Acres of Improved Land stated below.							
		No. of Acres of Improved Land.	No. of Acres of Woodland.	Value, in Dollars.	Value of Products, Betterments, etc., in Dollars.	Amount of Wages Paid for Labor, in Dollars.	Of all Sizes.b	Under 3 Acres.	3 and under 10.	10 and under 20.	20 and under 50.	50 and under 100.	100 and under 500.	500 and over.
Chippewa	56	38.35	116.25	1,060	902	118	57	.....	12	13	19	6	6	c 1
Clare	13	23.15	74.07	1,669	687	74	13	.....	4	5	1	2	1	.....
Clinton	2,600	43.57	40.50	3,590	828	98	2,597	.....	143	341	1,225	703	182	3
Delta	14	54.21	211.92	1,354	.....	329	14	.....	.....	4	4	3	3	.....
Eaton	2,415	47.93	44.34	3,529	746	70	2,414	.....	24	205	1,247	726	212	.....
Emmet	183	13.74	79.79	464	156	0.2	569	.....	277	160	124	7	1	.....
Genesee	3,568	48.25	36.63	3,540	733	85	3,569	.....	222	402	1,519	1,045	380	c 1
Grand Traverse	620	23.70	104.56	1,660	473	29	619	.....	141	160	250	55	13	.....
Gratiot	1,764	26.57	58.82	1,880	443	38	1,806	.....	312	497	769	201	27	.....
Hillsdale	3,472	55.31	31.41	4,218	820	50	3,517	3	114	259	1,403	1,244	491	3
Houghton	39	52.92	163.51	1,048	1,682	854	39	.....	1	7	19	7	4	1
Huron	1,079	23.43	104.51	1,346	379	33	1,082	1	266	305	407	89	12	2
Ingham	2,680	47.66	40.19	3,675	756	74	2,641	4	76	296	1,204	798	263	.....
Ionia	3,168	49.27	33.69	3,851	804	64	3,179	7	198	399	1,261	951	350	3
Iosco	30	21.56	184.36	1,850	340	90	30	.....	3	11	16	.....	.....	.....
Isabella	551	27.36	77.91	1,943	481	39	554	.....	74	166	227	69	18	.....
Jackson	3,310	76.03	29.55	4,459	1,061	114	3,307	14	107	192	789	1,230	967	8
Kalamazoo	2,896	69.10	26.27	5,950	983	128	2,938	9	136	229	879	1,013	669	3
Kalkaska	51	9.05	78.05	784	220	12	51	.....	34	13	3	1	.....	.....
Kent	4,065	50.11	37.28	4,083	712	76	4,065	11	214	416	1,639	1,349	435	1
Keweenaw	15	27.20	33.93	933	458	182	15	.....	3	11	1	.....	.....	.....

Lake	40	13.50	68.00	1,090	326	.....	40	.....	7	25	8	.....	.....	.....
Lapeer	1,877	57.60	43.61	3,812	932	149	1,876	.....	21	146	766	655	287	1
Leelanaw	570	20.13	102.98	1,304	438	23	570	.....	83	222	226	36	3	.....
Lenawee	4,815	61.00	29.83	4,889	1,098	123	4,812	.....	128	298	1,433	1,689	762	2
Livingston	2,692	66.77	27.01	3,980	876	94	1,980	.....	89	149	674	674	394	.....
Mackinac	9	39.00	145.66	1,022	914	43	9	.....	.....	3	4	1	1	.....
Macomb	3,039	50.57	30.26	3,944	788	67	2,999	.....	122	488	1,212	767	409	1
Manistee	137	17.52	143.06	1,601	584	38	142	.....	18	55	41	27	1	.....
Manitou	54	32.35	125.90	472	428	19	54	.....	1	6	36	10	1	.....
Marquette	5	62.00	180.00	2,900	520	520	5	.....	.....	.....	2	2	1	.....
Mason	310	14.10	69.99	1,097	205	23	311	.....	110	127	71	3	.....	.....
Mecosta	469	22.82	.....	2.102	511	74	460	.....	91	141	184	40	4	.....
Menominee	9	19.88	91.22	794	498	61	9	.....	.....	5	4	.....	.....	.....
Midland	185	28.11	73.97	2,178	666	129	352	.....	43	68	134	76	31	.....
Missaukee	5	45.60	290.20	1,940	1,117	490	.....	.....	.....	.....	.....	.....	.....	.....
Monroe	2,894	42.63	34.85	3,400	798	51	2,729	.....	178	398	1,304	671	177	1
Montcalm	1,373	35.26	60.24	2,572	577	64	1,307	.....	212	209	569	239	78	.....
Muskegon	526	31.33	113.46	2,553	582	49	531	.....	33	121	276	90	11	.....
Newaygo	516	42.61	76.09	2,334	714	91	516	.....	34	92	239	124	37	.....
Oakland	4,076	32.30	57.95	6.300	1,255	122	4,078	.....	29	74	330	1,306	1,284	5
Oceana	487	24.32	34.96	1,641	302	2	477	.....	61	131	225	58	2	.....
Ogemaw	2	68.00	72.00	1,250	2,375	550	2	.....	.....	1	.....	.....	1	.....
Ontonagon	129	57.65	262.51	6,771	564	133	111	.....	38	25	25	12	7	c 4
Osceola	345	13.28	167.52	1,233	184	36	341	.....	189	78	55	16	3	.....
Oscoda	2	75.00	185.00	3,250	1,723	450	2	.....	.....	.....	1	.....	1	.....

a The eight columns under this sub-heading are taken from Page 354, Advance Sheets, of Volume III., Ninth Census of the United States. The number of farms containing the number of acres specified are only those having the specified number of acres of improved land.

b The first column contains the number of farms as carefully compiled in this Department from the Schedule on file; the seventh column, as stated above, was copied from the volume compiled at Washington. They do not exactly agree. They are compiled not from the same manuscript, but from different ones, both copies of the original.

c One contains 1,000 and over.

TABLE 3.—CONTINUED.

COUNTIES.	Whole Number of Farms.	Average for Each Farm.					a Number of Farms containing the Number of Acres of Improved Land stated below.							
		No. of Acres of Improved Land.	No. of Acres of Wood-Land.	Value, in Dollars.	Value of Products, Betterments, etc., in Dollars.	Amount of Wages Paid for Labor, in Dollars.	Of all Sizes.b	Under 3 Acres.	3 and under 10.	10 and under 20.	20 and under 50.	50 and under 100.	100 and under 500.	500 and over.
Ottawa	2,904	28.54	36.80	2,525	607	25	2,908	.....	432	694	1,341	382	54	.....
Presque Isle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Saginaw	1,822	25.25	59.76	2,093	522	57	1,822	.....	323	335	494	141	29	.....
Sanilac	1,511	30.35	68.82	1.474	557	22	1,513	.....	186	387	685	207	47	1
Schoolcraft	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shiawassee	2,328	47.61	41.51	3,451	821	67	2,327	.....	93	295	1,059	658	225	2
St. Clair	2,864	36.73	28.85	2,413	547	44	2,864	.....	165	489	1,562	517	130	1
St. Joseph	2,204	88.71	29.50	6,992	1,777	133	2,772	16	102	648	1,113	887	6	.....
Tuscola	1,637	29.56	68.18	2,129	509	64	1,638	.....	220	399	744	285	40	.....
Van Buren	2,779	44.80	35.37	3,913	785	79	2,779	.....	131	447	1,238	734	234	.....
Washtenaw	3,585	79.10	29.80	6,209	1,362	231	3,585	.....	120	173	804	1,367	1,117	c 4
Wayne	3,637	47.35	23.80	4,728	823	115	3,626	4	191	470	1,569	1,005	387	.....
Wexford	62	22.98	129.14	1,438	559	19	62	.....	9	26	22	5	.....	.....

a The eight columns under this sub-heading are taken from Page 354, Advance Sheets, of Volume III., Ninth Census of the United States. The number of farms containing the number of acres specified are only those having the specified number of acres of improved land.

b The first column contains the number of farms as carefully compiled in this Department from the Schedule on file; the seventh column, as stated above, was copied from the volume compiled at Washington. They do not exactly agree. They are compiled not from the same manuscript, but from different ones, both copies of the original.

c One contains 1,000 and over.

From Table 1 of this summary it appears that the number of acres of land in farms has very greatly increased since the last census, as was true of the previous interval of time. It will be seen that the increase of improved land was in slightly greater proportion than that of the unimproved.

Table 2 shows among other things that the number of farms in the State has increased rapidly, and that their average size is decreasing.

The contents of Table 3 is shown by its heading. The five different combinations made for the purpose of obtaining averages giving general views of some of the prominent items are not claimed as being anything more than accurate statements of the averages calculated from the returns.

It is to be regretted that the statistics of land sown or planted for cereal products had not been ascertained throughout the State as provided in sections 804 and 805, Compiled Laws of 1871. If this be done hereafter it will supply items of importance in connection with the next census, as furnishing the data for computing the average yield of the different cereal products in the different parts of the State.

In the tabular portion of this volume a great deal of space has been devoted to the agricultural statistics because of their importance to a large proportion of the citizens of this State; and much careful attention has been given to the correction of errors in the returns, and to the compilation of the three tables which exhibit for each county and township in the State all the important statements of the agricultural schedule of the census. For this reason, and for others already indicated, very few combinations have been attempted, but for specific statements the reader is referred to the tables beginning on page 274 and ending on page 414. The foot-notes on pages 275, 323, and 372 are important to a proper understanding of the tables. In this connection it should be remarked that in Table II. the number of pounds of cheese returned is only that produced on farms; the products of cheese factories appear in Part IV.,—Products of Industry,—pages 534–539.

PART IV.—PRODUCTS OF INDUSTRY.

These statistics are submitted without much comment. The extensive tables, occupying a little over two hundred pages of this volume, have not been planned without much laborious thought, and during their compilation great care has been constantly exercised to make them as accurate as possible with the material at hand, and an extensive correspondence has been carried on in order to perfect the returns. Without doubt statisticians could devise methods which would result in the collection of much better material than that which has been here compiled; and with better material much fewer mistakes would occur in the compilation; but the main problem before the writer has been how best to compile the material at hand, and although it now appears that it has not been possible altogether to prevent the occurrence of errors, which are noted elsewhere, still it is believed that the statistics of industrial products are much more complete than any heretofore published in this State, and it is hoped will be found of sufficient value to compensate for the labor bestowed upon them.

In stating the number of establishments, the rule has been, in each productive industry which has been separately compiled in the tables, to count as a separate establishment each distinct business, even though it was carried on in the same building and with the same power with some other kind of business. For instance, in such cases as where a lumber-mill and a flouring-mill are both carried on by the same owner, the lumber-mill and the flouring-mill have each been counted as an establishment, or where some of the various other minor industries are carried on in connection with one of these more important ones, the important business has been counted as an establishment separate from the miscellaneous one. In cases where both industries were dependent upon the same power, the power has been given with the most important of the two industries, and the facts stated by foot-notes.

With these statistics, as with the others, it is important to notice the foot-notes, which explain or modify the statements of the tables. The note on page 626 should not be overlooked, and attention is particularly called to the note on page 571, consisting of extracts from instructions to assistant marshals, which will explain the scope of these statistics, so far as the original intention is concerned.

Just how much dependence should be placed upon each particular statement in these statistics, is a question which the writer has decided to leave to be answered by each reader for himself. Without doubt the opinion of the compiler might be useful concerning some of the items, especially interesting, perhaps, to those not technically acquainted with the particular business treated of; but inasmuch as those who will have most occasion to use the statistics will, as a rule, be those engaged in the particular business considered, and therefore most familiar with the subject, the writer shrinks from undertaking any discussion with the hope of materially adding to the value of the tables as they stand.

PART V.—SOCIAL STATISTICS.

The statistics tabulated in Part V. were collected on Schedule 5 of the U. S. Census, and in a manner different from that of the other statistics. They were collected by one Deputy U. S. Marshal appointed for this State, the material being mainly prepared by the clerks of the several counties in accordance with the provisions of an act of the Legislature of Michigan approved August 3, 1870. The Schedule embraced ten distinct subjects, viz: Churches, Schools, Libraries, Periodicals, Valuation, Taxation, Public Debt, Wages, Pauperism, and Crime; and the statistics have been tabulated in the order in which the subjects are enumerated above. A volume might be written upon each one of these subjects, and in fact one is printed annually by the Superintendent of Public Instruction concerning the Public Schools, by the Auditor General concerning Valuation, Taxation, Public Debt, etc., and by a State Board, concerning Pauperism and Crime, but the writer does not feel called upon for anything more than sufficient to enable the reader to understand the facts concerning the statistics as compiled. The effort has been made to express in the headings of the several tables the facts contained in the Schedule.

In Table VII. the "True Valuation of Real and Personal Estate" and the "Basis of Valuation for Assessment Purposes" are believed to be the results of estimates and statements made by the several county clerks from the best knowledge at their command.

There are many cases in this, as in the other schedules, where some different form of question would secure a more useful reply. For instance, in Table X. it will be seen that in the fifth column is exhibited the wages of female domestics per week *without board.* It seems not a little singular that it is so called for and given in the Schedule. There are, probably, few cases in this State where such is the method of payment. Again, the Schedule was defective in not specifying whether the "Paupers supported during the year" were temporarily or continually supported. By comparing the cost of support and the number supported with reports of superintendents of the poor, it appears that the items on the Schedule, as compiled in Table XI., include, as a rule, the number temporarily supported and the expense of temporary as well as of permanent support.

Throughout this volume, defects in methods of enumeration have been freely commented on in the interest of truth and progress. In criticising any defects in the methods of the United States Census, however, the writer is extremely desirous of keeping in view the fact that this whole mass of statistics, included in thirty-five large manuscript volumes, is, so far as the great expense attending the collection is concerned, a free gift to the State from the United States. And the fact should be prominently acknowledged that the gift is an extremely valuable one. Moreover, the writer feels it his duty to state that, in his opinion, the methods of enumeration are very far in advance of those adopted for the State census; the results are, therefore, at present much more to be depended upon. It is to be hoped that the State law will be improved.

As stated in the introduction, pages iv. and v., some items which required great labor were left out in planning the work for this volume, with the hope and expectation that they would be worked out by the census bureau, and that the results would be available for use by certain persons in this State. The printing of this volume having been delayed somewhat, it has been rendered possible to include herein most of the items referred to, the volumes of the U. S. Census from which they are taken having been received while this summary, the last printed portion of this volume, was going through the press. Due credit has been given the census bureau in connection with each table or item abstracted from its publications. They are particularly acceptable, as they add to the completeness of the statistics without increasing the expense for compilation.

INDEX

TO

STATISTICS OF MICHIGAN, 1870.

NOTE.—A few copies of the Summary and Index have been printed and bound together in pamphlet form, omitting the tabular portion.

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TO SUMMARY, STATISTICS OF MICHIGAN, 1870.

INDEX

TO TABULAR PORTION OF STATISTICS OF MICHIGAN, 1870.